

37. In Roman numeration, if a symbol is repeated, its value is not multiplied as many times as it occurs.
 (a) True (b) False
 (c) Cannot say (d) Both are equal
38. The angle subtended by the diameter of a semicircle on any point on the circle is
 (a) 45° (b) 180° (c) 90° (d) 60°
39. A big cube has each portion of 44 cm. Tiny cubes of 4 cm portion each are cut from that. Then how many tiny cubes will be formed that are surrounded by at least once cube?
 (a) 888 (b) 729 (c) 164 (d) 33
40. A rectangular tank 15 cm long, 12 cm wide and 8 cm high was completely filled with water. Find the volume of water in the tank.
 (a) 180 cm³ (b) 1200 cm³
 (c) 440 cm³ (d) 1440 cm³
41. Which option shows fractions arranged in ascending order?
 (a) $\frac{5}{8} < \frac{7}{12} < \frac{3}{4} < \frac{13}{16}$
 (b) $\frac{5}{8} < \frac{7}{12} < \frac{13}{16} < \frac{3}{4}$
 (c) $\frac{5}{8} < \frac{3}{4} < \frac{13}{16} < \frac{7}{12}$
 (d) $\frac{7}{12} < \frac{5}{8} < \frac{3}{4} < \frac{13}{16}$
42. What is the value of $945.341 - 1042.792 + 875.435 + 31.025$?
 (a) 908.004 (b) 810.008
 (c) 795.659 (d) 809.009
43. A man on tour travels first 160 km at 64 km/hr and the next 160 km at 80 km/hr. The average speed for the first 320 km of the tour is
 (a) 35.55 km/hr (b) 36 km/hr
 (c) 71.11 km/hr (d) 71 km/hr
44. On dividing 2272 as well as 875 by a 3-digit number N, we get the same remainder. The sum of the digits of N is
 (a) 10 (b) 11
 (c) 12 (d) 13
45. It takes Julie $\frac{1}{2}$ hour to wash, comb her hair and put on her clothes and $\frac{1}{4}$ hour to have her breakfast. How much time does it take Julia to be ready for school?
 (a) $\frac{3}{4}$ hour (b) 1 hour
 (c) $\frac{2}{4}$ hour (d) $\frac{5}{4}$ hour
46. Which of the following numbers in Roman Numerals is incorrect?
 (a) LXII (b) XCI
 (c) LC (d) XLIV
47. How many faces are there in a cuboid?
 (a) 6 (b) 12 (c) 8 (d) 4
48. A flat surface which extends indefinitely in all directions is called a
 (a) Plane (b) Line
 (c) Line segment (d) Point
49. The difference between two complementary angles is 10° . Calculate the values of both the angles.
 (a) $55^\circ, 45^\circ$ (b) $40^\circ, 50^\circ$
 (c) $50^\circ, 60^\circ$ (d) $100^\circ, 90^\circ$
50. The total weight of brinjal, lady-finger and onion is 48.057 kg. If brinjal and lady-finger weight 5.35 kg and 24.52 kg respectively, find the weight of onion.
 (a) 17.187 kg (b) 18.187 kg
 (c) 17.180 kg (d) 18.180 kg

GENERAL KNOWLEDGE

51. Which device is used to measure the speed of vehicles?
 (a) Gravometer (b) Speedometer
 (c) Gyroscope (d) Kilometer
52. From which monument did India adopt its National Emblem?
 (a) Kapilavastu (b) Hastinapur
 (c) Sarnath (d) Panipat
53. In which of the following styles of dance is the story/theme always taken from Mahabharata and Ramayana?
 (a) Mohiniattam (b) Odissi
 (c) Bharatanatyam (d) Kuchipudi
54. Arrange the months based on our National Calender (Saka Era) in correct serial order – a-Chaitra b-Vaishakha c-Jyaishta d-Aashada:
 (a) abcd (b) bcda
 (c) dacb (d) cdab

55. Which one of the following is a combat aircraft?
 (a) Tejas
 (b) Dhruv
 (c) Boeing C-17 Globemaster
 (d) Chetak
56. Which of the following cups/trophies is associated with football?
 (a) Davis Cup
 (b) Champions Trophy
 (c) Santosh Trophy
 (d) Deodhar Trophy
57. How do ants recognize ants from their group?
 (a) By colour (b) By face
 (c) By smell (d) By Height
58. Which of the following is domesticated in poultry farms?
 (a) Goat (b) Sheep
 (c) Hen (d) Horses
59. The _____ cover the tongue and react to chemicals in food.
 (a) Taste Buds (b) Sphincters
 (c) Teeth (d) Skin
60. What does freezing do when preserving foods?
 (a) Keeps the foods product hard
 (b) Keeps the flavours of the food fresh
 (c) Stops growth of micro-organisms
 (d) None of the above
61. Seeds of drumstick and maple are carried over long distances by wind because they possess.
 (a) winged seeds
 (b) large and hairy seeds.
 (c) long and ridged fruits.
 (d) spiny seeds
62. _____ is a traditional rainwater harvesting technique of Rajasthan.
 (a) Taanka (b) Khadin
 (c) Bavadi (d) Kuan
63. Which of the following will dissolve in water?
 (a) Soil (b) Chalk Powder
 (c) Sugar (d) Oil
64. Which of the following is a communicable disease?
 (a) Diabetes (b) Chicken pox
 (c) Alzheimer's (d) Cancer
65. To climb the mountains, we have to
 (a) Bend forward
 (b) Bend backwards
 (c) Walk straight
 (d) Walk sideways
66. Name an astronomical observatory built in the 18th century by Rajput King Sawai Jai Singh of Rajasthan.
 (a) Red Fort (b) Qutab Minar
 (c) Jantar Mantar (d) Taj Mahal
67. _____ includes internal rocks, minerals, etc.
 (a) Atmosphere (b) Biosphere
 (c) Hemisphere (d) Geosphere
68. The remains of plants and animals that were buried millions of years ago are known as
 (a) potential reserves (b) fossil fuels
 (c) biomass fuel (d) animate power
69. Rasgulla is a popular sweet of _____.
 (a) West Bengal
 (b) Punjab
 (c) Kerala
 (d) Himachal Pradesh
70. Which of the following is a tribal community of India?
 (a) Pandit (b) Jaat
 (c) Bhil (d) Punjabi
71. Clouds are mostly made of
 (a) snow (b) dust
 (c) water droplets (d) smog
72. For which of the following works has Vasdev Mahi been awarded the 29th Saraswati Samman?
 (a) Lost Children Archive
 (b) Chequebook
 (c) The Stranger Diaries
 (d) A Song for a New Day
73. Who was the first Indian to be the President of U.N. General Assembly?
 (a) Natwar Singh
 (b) V.K. Krishna Menon
 (c) Smt. Vijaya Lakshmi Pandit
 (d) Smt. Indira Gandhi
74. In which of the following parts of the human body are sweat glands absent?
 (a) Scalp (b) Armpits
 (c) Lips (d) Palms
75. What do we call the young one of a Kangaroo?
 (a) Foal (b) Colt
 (c) Joey (d) Cub

LANGUAGE

Direction : Read the following passage and answer the questions.

Zeus and Prometheus

From the very first, humans had trouble with the Greek Gods. Most Gods thought of humans as toys. But Gods made friends with the humans. One of those Gods was Prometheus. The first people created by the Gods lived happily together. They thought the Gods were wonderful. But their children were not as grateful or as content. The children argued among themselves, and sometimes even argued with the Gods. Zeus was very disappointed at mankind. He decided to punish mankind by depriving them of a very important tool – fire. Prometheus felt sorry for his human friends. Fire was important for many things such as heat and cooking. Prometheus stole a lighting bolt from Zeus and gave it to mankind. That's when man discovered fire.

Zeus was furious as Prometheus had defied Zeus. He ordered Prometheus be chained to a rock as punishment for stealing his lightning bolt, and for going behind his back to help the humans. To make Prometheus even more miserable, Zeus sent storms to beat angry waves against Prometheus, helplessly chained to his rock. Zeus made the sun shine really brightly now and then to burn his skin. It was Hercules who finally released that helpless God from his chains.

76. Which of the following statements is not true about Zeus and Prometheus?
- Most Greek Gods saw humans as a means of their entertainment.
 - Prometheus was chained to a rock as he was a God.
 - Zeus was an unforgiving God who did not like to be disobeyed.
 - Hercules emerged as the saviour of Prometheus.
77. Why was Zeus angry and disappointed at humans?
- They kept asking him for fire.
 - The humans misused his lightning bolt.
 - The humans were quarrelsome and didn't respect the Gods.
 - The humans were not intelligent enough to discover fire.
78. What is the meaning of the underlined word: 'Proetheus had defied Zeus'?
- Prometheus had worshipped Zeus all his life.
 - Prometheus had defamed Zeus.
 - Prometheus detested Zeus for his attitude.
 - Prometheus had disregarded the authority of Zeus.
- Fill in the blanks with the most appropriate option.
79. The news is all _____ the internet.
- on
 - through
 - over
 - never
80. We studied about _____ Roman Empire in school.
- a
 - an
 - the
 - no article
81. There was no one else in the room _____ Collin.
- accept
 - except
 - axcept
 - accept
- Rearrange the following words/phrases to make meaningful sentences. Choose the correct sequence.**
82. the sun (A) / you (B) / of (C) / must (D) / stay out (E)
- ECADB
 - ABCDE
 - BDECA
 - DECAB
83. I (A) / immediately (B) / salary (C) / my (D) / want (E)
- BAEDC
 - AEDCB
 - DCAEB
 - EADCB
84. Do as directed:
There are some diseases that are inherited. (Identify the kind of Noun)
- 'diseases' is a proper noun
 - 'diseases' is an abstract noun
 - 'diseases' is a collective noun
 - 'diseases' is a common noun
85. After school you and _____ must discuss a few things. (Choose the correct pronoun)
- him
 - me
 - I
 - we
86. It is quite warm, _____ ? (Use a Question Tag)
- is it
 - wasn't it
 - isn't it
 - was it
87. Leave your bags at the gate. (Identify the type of sentence)
- Imperative
 - Declarative
 - Interrogative
 - Exclamatory

88. Near the equator, the sun _____ greater quantities of water. (Choose the correct form of the verb)
 (a) is evaporating (b) evaporates
 (c) has evaporated (d) evaporate
89. Chose the correct spelling:
 (a) appartment (b) aparttment
 (c) apartment (d) apartmant
90. Today is the _____ day of my life. (Choose the correct adjective)
 (a) more important (b) less important
 (c) important (d) most important
91. Poets are known to fly in their thoughts. (Choose the word nearest in meaning to the underlined word)
 (a) sore (b) sour
 (c) soar (d) sure
92. Choose the most appropriate option:
 Which of the following options is the meaning of the word 'exhausted' ?
 (a) Very hot (b) Very polluted
 (c) Very fresh (d) Very tired
93. A confectioner is a person who _____.
 (a) sells tools (b) sells confetti
 (c) sells sweets (d) sells clothes
94. The captain _____ along with the players.
 (a) was present
 (b) was presenting
 (c) have been presenting
 (d) has been presenting
95. Choose the word that means the opposite of MORTAL.
 (a) Unmortal (b) Immortal
 (c) Inmortal (d) Dismortal
96. A _____ of thieves was caught by the Police.
 (a) swarm (b) pack
 (c) team (d) batch
97. It has become his habit to _____ do his homework and then copy it from others.
 (a) always (b) often
 (c) frequently (d) never
98. There were several _____ at the conference.
 (a) women (b) woman
 (c) wemens (d) womans
99. 'To beat around the bush' means
 (a) to turn violent against a stranger.
 (b) to avoid saying something because it is uncomfortable.

- (c) to come to the main point of the conversation.
 (d) to start a fire in the forest.
100. My father is a bookworm, he _____ books to films and sports.
 (a) is prefer (b) prefer
 (c) prefers (d) are prefer

INTELLIGENCE TEST

101. What comes next in the given series ?
 A, C, F, H, K, M,
 (a) N (b) Y (c) P (d) M
102. Rahul started walking straight towards East. He walks a certain distance and then turns towards his right and walks again. In which direction is he heading now?
 (a) North (b) East
 (c) South (d) West
103. From the given options, choose the odd one out.
 (a) Bangladesh : Taka
 (b) Brazil : Real
 (c) Cyprus : Dollar
 (d) Iran : Rial
104. Tanya is older than Eric.
 Cliff is older than Tanya.
 Eric is older than Cliff.
 If the first two statements are true, the third statement is
 (a) True (b) False
 (c) Uncertain (d) None of these
105. What will come at the place of the question mark ?
 10, 100, 200, 310, ?
 (a) 420 (b) 410 (c) 430 (d) 400
106. A is B's sister. C is B's mother. D is C's father. E is D's mother. Then how is A related to D?
 (a) Grandfather (b) Grandmother
 (c) Daughter (d) Grand-daughter
107. In a certain code language, COMPUTER is written as RFUVQNPC. How will MEDICINE be written in that code language?
 (a) MFEDJJOE (b) EQJDEJFM
 (c) MFEJDJOE (d) EOJDJEFM
108. If South-East becomes North, North-East becomes West and so on, what will West become?
 (a) North-East (b) North-West
 (c) South-East (d) South-West

109. In a class of 45 students, Amir's rank from the top is 16th. Ashok is 6 ranks below Amir. What is Ashok's rank from the bottom?

- (a) 23rd (b) 32nd
(c) 24th (d) 30th

110. Which one set of letters when sequentially placed at the gaps in the given letters series shall complete it?

_ab_b_aba_abab.

- (a) abbaa (b) bbaab
(c) abaab (d) aaaba

111. Look at this series: 2, 1, (1/2), (1/4), What number should come next?

- (a) 1/3 (b) 1/8
(c) 2/8 (d) 1/16

112. Choose the correct alternative that has the same relation.

SCD, TEF, UGH, _____, WKL

- (a) CMN (b) UJI (c) VIJ (d) IJT

113. If 'WAY' is coded as 679, 'MAY' is coded as 579, then 'YAW' will be coded as.

- (a) 976 (b) 769 (c) 679 (d) 579

114. If '+' means "Minus", '-' means "Multiply", 'x' means "Add", then what is the value of $10 \times 5 + 3 - 2$?

- (a) 24 (b) 52 (c) 9 (d) 10

115. mend : sewing :: edit : _____

- (a) darn (b) repair
(c) manuscript (d) makeshift

116. Fill in the Blank

Rein : horse :: control panel : _____

- (a) pilot (b) bit
(c) plane (d) rider

117. Choose the word which is least like the words in the group.

- (a) MS Paint (b) Facebook
(c) WhatsApp (d) Twitter

118. Choose the word that is a necessary part of the underlined word.

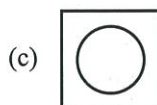
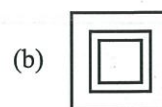
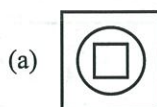
Guitar

- (a) Band (b) Teacher
(c) Songs (d) Strings

119.



Completer the second pair by selecting the appropriate alternative.



120. A man walks 6 km south, turns left and walks 4 km, again turns left and walks 5 km. Which direction is he facing now?

- (a) South (b) North
(c) East (d) West

121. Which letter replaces the question mark?

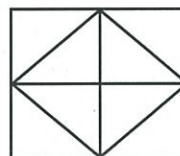


- (a) N (b) O (c) P (d) M

122. The priest told the devotee, "The bell rings at regular intervals of 45 minutes. The last bell rang 5 minutes ago. The next bell is due to be rung at 7:45 am." At what time did the priest give this information to the devotee?

- (a) 6:55 am (b) 7:00 am
(c) 7:05 am (d) 7:40 am

123. How many triangles are there in the figure given below?



- (a) 4 (b) 12 (c) 16 (d) 10

124. In a code, 'BOMBAY' is coded as 'CNNABX', then what will be the #code# of 'DELHI'?

- (a) EDMJG (b) GMDEJ
(c) DEGMJ (d) EDMGJ

125. Fill in the blank.

Segregate : unify :: repair : _____

- (a) approach (b) push
(c) damage (d) outwit

Solutions

MATHEMATICS

- (c) The whole numbers are closed under multiplication.
- (b) 1 million = 1,000,000
Successor of 1 million = 1,000,000 + 1 = 1,000,001
- (*) x is at 1.
 y is at 2.
XW, WT, TP, PQ, QY is 5 equal parts from 1 to 2.

$$\text{Each part} = \frac{(2-1)}{5} = \frac{1}{5}.$$

From O to P.

OU, US, SV, VR, RX, XW, WT, TP.

$$8 \text{ equal parts, hence } OP = 8\left(\frac{1}{5}\right) = \frac{8}{5}.$$

The fraction represented by length OP is $\frac{8}{5}$.

- (a) $\frac{5}{7} = 0.71$
So, the two consecutive integers, between the fraction $\frac{5}{7}$ lies, are "0 and 1".

- (a) $\frac{4}{5} = 0.8$ $\frac{5}{3} = 1.66$
 $\frac{5}{6} = 0.83$ $\frac{5}{2} = 2.5$

So, smallest fraction is " $\frac{4}{5}$ ".

- (c) HCF = 6
LCM = 864
One number = 96
Second number = ?
Let, the second number is x .
LCM \times HCF = First number \times Second number
 $\Rightarrow 864 \times 6 = 96 \times x$
 $\Rightarrow x = \frac{864 \times 6}{96} \Rightarrow x = 54.$

- (a) Given that the HCF of two numbers is 12 and their difference is 12.
Let the two numbers are x and y .

Since the HCF of x and y is 12.

So, $x = 12a$ and $y = 12b$, where a and b are prime to each other.

Also, the difference of x and y is 12.

$$\therefore x - y = 12$$

$$\Rightarrow 12a - 12b = 12$$

$$\Rightarrow 12(a - b) = 12$$

Both sides dividing by 12.

$$a - b = 1$$

a and b are consecutive to each other and also are prime to each other.

Now we will check by the options.

Option (1),

$$\text{Let } x = 96 \text{ and } y = 84$$

$$x - y = 96 - 84$$

$$x - y = 12$$

...(1)

Hence, the difference of two numbers is 12 and also the HCF of the two numbers is 12.

Now we will check whether the values satisfy the equation or not.

By dividing x and y by 12 and then subtracting

$$\frac{y}{12} \text{ from } \frac{x}{12},$$

$$\text{we get } \frac{x}{12} - \frac{y}{12} = \frac{96}{12} - \frac{84}{12} = 8 - 7 = 1$$

$$\therefore x - y = 12$$

Hence, option (1) is correct.

- (d) LCM of 9, 12 and 15

3	9,	12,	15
3	3	4	5
4	1	4	5
5	1	1	5
	1	1	1

$$= 3 \times 3 \times 4 \times 5 = 180.$$

So, smallest number that is divisible by 9, 12 and 15 is 180.

- (b) Cost price of one dozen soap powder = ₹144
 \therefore Cost price of 8 dozen soap powder = ₹144 \times 8 = ₹1152
Selling price of one soap powder packet = ₹15

Selling price of one dozen soap-powder packet
 $= ₹15 \times 12 = ₹180$.

Selling price of 8 dozen soap-powder packet
 $= ₹180 \times 8 = ₹1440$

Profit on 8 dozen soap-powder = $1440 - 1152$
 $= ₹288$.

Profit percentage

$$= \frac{\text{Profit}}{\text{Cost Price}} \times 100 = \frac{288}{1152} \times 100 = 25\%.$$

10. (b) To find the greatest number that will divide 37, 56, 93 leaving remainder 1, 2 and 3 respectively we should find the HCF of

$$37 - 1 = 36, 56 - 2 = 54 \text{ and } 93 - 3 = 90$$

The factors of

$$36 = 1, 2, 3, 4, 6, 9, 12, 18, 36$$

$$54 = 1, 2, 3, 6, 9, 18, 27, 54$$

$$90 = 1, 2, 3, 5, 6, 9, 10, 15, 18, 30, 45, 90$$

So, HCF is 18.

\therefore The greatest number is 18.

11. (b) $M_1 = 10$ men

$$D_1 = 4 \text{ days}$$

$$D_2 = 5 \text{ days}$$

$$M_2 = ?$$

Let x men will be required.

$$\text{Then, } M_1 \times D_1 = M_2 \times D_2$$

$$\Rightarrow 10 \times 4 = x \times 5$$

$$\Rightarrow x = \frac{10 \times 4}{5} = 8 \text{ men.}$$

So, "8" men will be required.

12. (b) 15 cows = 21 goats

$$1 \text{ cow} = \frac{21}{15} \text{ goats}$$

$$35 \text{ cows} = \frac{21}{15} \times 35 = 49 \text{ goats}$$

So, 49 goats eat as much as 35 cows.

13. (a) A mechanic earns on 9 cars = ₹36,000

A mechanic earns on 1 car

$$= \frac{36000}{9} = ₹4000$$

A mechanic earns on 27 cars = 4000×27

$$= ₹1,08,000.$$

So, he will receive in 1 day = ₹1,08,000.

14. (c) $x : y = 3 : 5$

$$\text{Or, } \frac{x}{y} = \frac{3K}{5K}$$

$$\text{So, } x = 3K, y = 5K$$

$$3x + 4y : 8x + 5y$$

Putting the values of x and y .

$$3 \times 3K + 4 \times 5K : 8 \times 3K + 5 \times 5K$$

$$\Rightarrow 9K + 20K : 24K + 25K$$

$$\Rightarrow 29K : 49K$$

\therefore Required ratio = 29 : 49.

15. (c) If 3, 18, m , 42 are in proportion.

$$\text{Then, } \frac{3}{18} = \frac{m}{42}$$

$$\Rightarrow \frac{1}{6} = \frac{m}{42} \Rightarrow m = \frac{42}{6}$$

So, $m = 7$.

16. (c) Total trainees in NCC camp = 1200

Selected for Republic Day camp = 900

$$\text{Not selected} = 1200 - 900 = 300.$$

The ratio between the number of selected and non-selected candidates

$$= 900 : 300 = 3 : 1.$$

17. (c) Let the cost price of the book = ₹ x .

Selling Price of the book = ₹450.

Loss percentage = 10%

$$\therefore \text{CP} \times 90\% = \text{SP}$$

$$\Rightarrow x \times \frac{90}{100} = 450$$

$$\Rightarrow x = ₹500.$$

To gain 10% profit, the selling price should be 110% of CP

$$= 500 \times \frac{110}{100} = ₹550.$$

18. (d) Selling price of first speaker = ₹7,500

Profit percentage = 20%

\therefore Cost price of first speaker

$$= \frac{7500}{120} \times 100 = ₹6250.$$

Selling price of second speaker = ₹8100.

Loss percentage = 10%

\therefore Cost price of second speaker

$$= \frac{8100 \times 100}{90} = ₹9000$$

Cost price of both the speakers

$$= 6250 + 9000 = ₹15250.$$

Selling price of both the speakers

$$= 8100 + 7500 = ₹15600.$$

$$\text{Profit} = 15600 - 15250 = ₹350.$$

19. (b) $(8 + 4 - 2) \times (17 - 12) \times 10 - 89 = ?$

$$\Rightarrow (10) \times (5) \times 10 - 89 = ?$$

$$\Rightarrow 50 \times 10 - 89 = ?$$

$$\Rightarrow 500 - 89 = ? \Rightarrow ? = 411.$$

20. (c) $0.05 + 1.5 \times 5 \div 10 \times 0.5 = ?$

$$\Rightarrow 0.05 + 1.5 \times \frac{5}{10} \times 0.5 = ?$$

$$\Rightarrow 0.05 + 1.5 \times \frac{1}{2} \times 0.5 = ?$$

$$\Rightarrow 0.05 + \frac{.75}{2} = ?$$

$$\Rightarrow 0.05 + 0.375 = ? \Rightarrow ? = 0.425.$$

21. (b) $7 + 5 - 2 \times (7 + 89) - 94 \div 2$
 $+ (33 \div 3 + 9 \times 2 - 7) \div 11 = ?$

$$\Rightarrow 12 - 2 \times (96) - 47 + (11 + 18 - 7) \div 11 = ?$$

$$\Rightarrow 12 - 192 - 47 + (22) \div 11 = ?$$

$$\Rightarrow 12 - 192 - 47 + 2 = ?$$

$$\Rightarrow 14 - 239 = ? \Rightarrow ? = -225.$$

22. (a) The average weight of 20 boys = 160 Kg.
 Total weight of 20 boys = $20 \times 160 = 3200$ Kg.
 The weight of remaining 5 boys
 $= 50 \times 5 = 250$ Kg.
 Total weight of 25 boys = $3200 + 250 = 3450$ Kg.
 Average weight of all 25 boys

$$= \frac{3450}{25} = 138 \text{ Kg.}$$

23. (d) The average marks obtained by 7 students = 226.

Total marks obtained by 7 students
 $= 226 \times 7 = 1582$

The sum of six students' marks
 $= 340 + 180 + 260 + 56 + 275 + 307 = 1418.$

Marks obtained by 7th student
 $= 1582 - 1418 = 164.$

24. (b) If a month starting with Sunday, then there will be 5 Sundays.

Average visitors on Sunday = 510

Total visitors in 5 Sundays = $510 \times 5 = 2550$

Average visitors on other days = 240

Total visitors in on other days

$$= 240 \times (30 - 5) = 240 \times 25 = 6000.$$

The average number of visitors in a month

$$= \frac{6000 + 2550}{30} = \frac{8550}{30} = 285.$$

25. (d) Let his average in 16th match was x .
 Then, ATQ -

$$16 \times x + 87 = 17(x + 3)$$

$$\Rightarrow 16x + 87 = 17x + 51$$

$$\Rightarrow 17x - 16x = 87 - 51 \Rightarrow x = 36$$

$$\therefore \text{His average after 17th match} = (x + 3) = 36 + 3 = 39.$$

26. (a) Average of 1, 3, 5, 7, 9, 11, 13

$$= \frac{1 + 3 + 5 + 7 + 9 + 11 + 13}{7} = \frac{49}{7} = 7.$$

27. (c) $x\%$ of $y = 100$

$$\Rightarrow y \times \frac{x}{100} = 100$$

$$\Rightarrow \frac{y}{100} = \frac{100}{x} \quad \dots(1)$$

$$y\% \text{ of } z = 200$$

$$z \times \frac{y}{100} = 200 \quad \dots(2)$$

Put the value of $\left(\frac{y}{100}\right)$ in eqn. (2) from the eqn. (1)

$$z \times \left(\frac{100}{x}\right) = 200$$

$$\Rightarrow \frac{z}{x} = 2 \Rightarrow z = 2x.$$

28. (c) Let the number is ' a '.
 According to the question -

$$a \times \frac{1}{4} \times \frac{1}{3} \times \frac{2}{5} = 15$$

$$\Rightarrow a = 15 \times 30 = 450.$$

$$\text{Now, } 40\% \text{ of the number} = \frac{450 \times 40}{100} = 180.$$

29. (b) Let the number is ' a '.
 According to the question :

$$40 \times 15\% = a \times \frac{25}{100} + 2$$

$$\Rightarrow 40 \times \frac{15}{100} = a \times \frac{1}{4} + 2$$

$$\Rightarrow 6 = \frac{a}{4} + 2 \Rightarrow \frac{a}{4} = 6 - 2$$

$$\Rightarrow \frac{a}{4} = 4 \Rightarrow a = 16.$$

30. (c) Area of rectangular playground = 700 sq. m.
Breadth of rectangular playground = 25 m.
Let the length of rectangular playground = l m.
Area of rectangle = Length \times Breadth

$$\Rightarrow 700 = l \times 25$$

$$\Rightarrow l = \frac{700}{25} = 28 \text{ m.}$$

$$\Rightarrow l = 28 \times 100 = 2800 \text{ cm } (\because 1 \text{ m} = 100 \text{ cm})$$

31. (b) Principal amount = ₹1200.

Interest = ₹432.

Let the rate of interest is r , then time period = r .

$$\text{Simple interest} = \frac{\text{Principal} \times \text{rate} \times \text{time}}{100}$$

$$\Rightarrow 432 = \frac{1200 \times r \times r}{100}$$

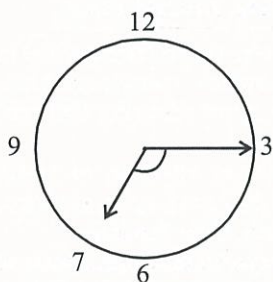
$$\Rightarrow r^2 = \frac{432}{12} = 36$$

$$\Rightarrow r^2 = 36 \Rightarrow r = \sqrt{36}$$

$$\therefore r = 6.$$

$$\therefore \text{Rate of interest} = 6\%.$$

32. (c)



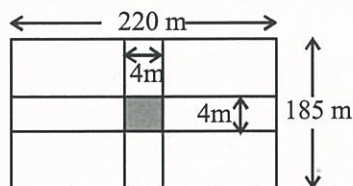
Obtuse angle will be formed.

33. (b) The maximum temperature of May, July and September in New York City last year = 21°C , 29°C and 24°C

Average maximum temperature in these months last year

$$= \frac{21 + 29 + 24}{3} = \frac{74}{3} = 24.66^\circ\text{C}$$

34. (a) In the morning, temperature = -10°C
In the evening, temperature = -7°C
(\because If decreases 3° by the evening)
35. (d) Length of rectangular garden = 185 m
Breadth of rectangular garden = 220 m



Area of road parallel to its breadth

$$= 220 \times 4 = 880 \text{ m}^2$$

Area of road parallel to its length

$$= 185 \times 4 = 740 \text{ m}^2$$

Common area of road = $4 \times 4 = 16 \text{ m}^2$

$$\therefore \text{Total area of road} = (880 + 740) - 16$$

$$= 1620 - 16 = 1604 \text{ m}^2$$

Cost of levelling the road = ₹1.25 per sq. m.

$$\text{Total cost of levelling the road} = 1604 \times 1.25 = ₹2005.$$

36. (a) 1 decimeter = 10 cm or 0.1 m.

$$\therefore 1 \text{ decimeter} = \frac{1}{10} \text{ m} = 1 \times 10^{-1} \text{ m.}$$

37. (b) It is a false statement.

In roman numeration, if a symbol is repeated, its value is added as many times as it occurs.

38. (c) The angle subtended by the diameter of a semicircle on any point on the circle is 90° .



39. (b) Length of each portion of big cube = 44 cm
Length of each portion of tiny cube = 4 cm

$$\text{Total length is divided into} = \frac{44}{4} = 11 \text{ parts}$$

$$\text{So, } x + 2 = 11$$

$$\Rightarrow x = 11 - 2 = 9 \text{ cm.}$$

\therefore The number of cubes will be formed such that each face of these cubes is surrounded by other cubes is

$$(x)^3 = (9)^3 = 729.$$

40. (d) Length of rectangular tank = 15 cm
Breadth of rectangular tank = 12 cm
Height of rectangular tank = 8 cm
Volume of rectangular tank
= Length \times Breadth \times Height
= $15 \times 12 \times 8 = 120 \times 12 = 1440 \text{ cm}^3$.

41. (d) $\frac{5}{8}, \frac{7}{12}, \frac{3}{4}$ and $\frac{13}{16}$

$$\text{LCM of } 8, 12, 4 \text{ and } 16 =$$

4	4	8	12	16
2	1	2	3	4
3	1	1	3	2
2	1	1	1	2
	1	1	1	1

$$= 4 \times 2 \times 3 \times 2 = 48.$$

$$\frac{5}{8} \times 48 = 30$$

$$\frac{7}{12} \times 48 = 28$$

$$\frac{3}{4} \times 48 = 36$$

$$\frac{13}{16} \times 48 = 39.$$

So, ascending order of fractions is

$$\frac{7}{12} < \frac{5}{8} < \frac{3}{4} < \frac{13}{16}.$$

42. (d) $945.341 - 1042.792 + 875.435 + 31.025 = ?$
 $\Rightarrow 1851.801 - 1042.792 = ?$
 $\therefore ? = 809.009.$

43. (c) First distance = 160 Km
 First speed = 64 Km/h.

$$\text{Time} = \frac{\text{Distance}}{\text{Speed}} = \frac{160}{64} = 2.5 \text{ hr.}$$

Second distance = 160 Km.

Second speed = 80 Km/h.

$$\text{Time} = \frac{\text{Distance}}{\text{Speed}} = \frac{160}{80} = 2 \text{ hr.}$$

Total distance = 320 Km.

Total time = $2.5 + 2 = 4.5$ hr.

Average speed of the tour

$$= \frac{320}{4.5} = 71.11 \text{ Km/hr.}$$

44. (a) On dividing 2272 as well as 875 by 3-digit number N , we get the same remainder.
 Clearly $2272 - 875 = 1397$, is divisible by N .
 Now, Factors of $1397 = 11 \times 127$
 So, required 3-digit number is 127.
 And the sum of 3-digit number = $1 + 2 + 7 = 10$.

45. (a) Julia takes to wash, comb and put on her clothes = $\frac{1}{2}$ hour.

$$\text{Julia takes to have her breakfast} = \frac{1}{4} \text{ hour.}$$

Required time for Julia to be ready for school

$$= \frac{1}{2} + \frac{1}{4} = \frac{2+1}{4} = \frac{3}{4} \text{ hour.}$$

46. (c) LXII = 62

XCI = 91

XLIV = 44

So, LC is incorrect.

47. (a) A cuboid has 6 faces.

48. (a) A flat surface which extends indefinitely in all directions is called 'Plane'.

49. (b) Let both the angles are a and b .

If two angles make 90° angle then they are called complementary.

Then, $a + b = 90$

and $a - b = 10$ (given)

By adding : $2a = 100 \Rightarrow a = 50^\circ$

By subtracting : $2b = 80 \Rightarrow b = 40^\circ$.

50. (b) Total weight of Brinjal, Lady-finger and Onion = 48.057 Kg.

Weight of Brinjal = 5.35 Kg.

Weight of Lady-finger = 24.52 Kg.

Weight of Onion = $48.057 - (5.35 + 24.52)$

$= 48.057 - 29.87 = 18.187$ Kg.

GENERAL KNOWLEDGE

51. (b) Speedometer is a instrument that indicates the speed of a vehicle, usually combined with a device known as an odometer that records the distance travelled.
52. (c) The national emblem of India is an adaptation of the Lion Capital atop the Ashoka Pillar of Sarnath, Uttar Pradesh.
53. (c) Bharatanatyam is the dance form in which the themes are taken from Ramayana and Mahabharata. It is a genre of Indian classical dance. Bharatanatyam was originated in Tamil Nadu.
54. (a) Saka Samvat has been adopted as an official civil calendar by India. Saka Samvat starts from 78 AD, The months in the Saka Samvata are Chaitra, Vaisākha, Jyēṣṭha, Āshāḍha, Shrāvana, Bhādra, Āshwin, Kārtika, Agrahāyana, Pausa, Māgha and Phālguna respectively. Hence (1) is the correct answer.
55. (a) Combat aircraft are designed to destroy enemy equipment using their own aircraft ordnance. Combat aircraft are typically developed and procured only by military forces. Tejas, MIG 21, MiG 29, Sukhoi Su-30, Dassault Rafale, Mirage 2000, SEPECAT Jaguar are combat aircrafts in India.

56. (c) Santosh Trophy is associated Football. It is an Indian football tournament in which the states of the country along with some government institutions participate. Davis Cup is associated with Lawn Tennis, 'Champion Trophy' with hockey while the Deodhar Trophy is associated with the game of cricket.
57. (c) Every ant of a constant group has a different claw and characteristics smell. So by this they can recognize the ants from their group.
58. (c) Poultry farming is the form of animal husbandry which raises domesticated birds such as Hens, ducks, turkeys and geese to produce meat or eggs for food.
59. (a) Taste buds are sensory organs that are found on your tongue and allow you to experience tastes that are sweet, salty, sour, and bitter.
60. (c) Freezing delays spoilage and keeps foods safe by preventing microorganisms from growing and by slowing down the enzyme activity that causes food to spoil.
61. (a) Various seeds and fruits have some special feature due to which they are carried away in a particular way (by wind, water or animal). Seeds of drumstick and maple have wings which help them to be easily carried away by wind.
62. (a) A taanka, are also known as a tanka or kunds, is a traditional rainwater harvesting technique, common to the Thar desert region of Rajasthan, India.
63. (c) Salt and Sugar are soluble substances. Soluble substances are those which disappear when mixed with water while Insoluble substances are those which don't disappear or dissolve when mixed with water. Eg: sand, chalk, sawdust etc.
64. (b) Communicable diseases spread from one person to another or from an animal to a person. The spread often happens via airborne viruses or bacteria, but also through blood or other bodily fluid.
Non-communicable diseases (NCDs) include a range of chronic conditions, including cancer, diabetes, cardiovascular disease, hypertension, as well as Alzheimer's and other dementias. Chickenpox is a highly contagious disease caused by the varicella-zoster virus (VZV). The virus spreads mainly through close contact with someone who has chickenpox.
65. (a) To climb the mountains we have to bend forward.
66. (c) Jantarantar was built in 1724 by Maharaja Jai Singh II of Jaipur, it is among the five observatories, the biggest one located in Jaipur. The rest are in Ujjain, Varanasi and Mathura.
67. (d) The geosphere is the part of the planet composed of rock and minerals; it includes the solid crust, the molten mantle and the liquid and solid parts of the earth's core.
68. (b) Fossil fuels are made from decomposing plants and animals. These fuels are found in the Earth's crust and contain carbon and hydrogen, which can be burned for energy. Coal, oil, and natural gas are examples of fossil fuels.
69. (a) Rasgulla is a popular bengali sweet made of milk and sugar. It is made from ball-shaped dumplings of chhena (an Indian cottage cheese) and semolina dough, cooked in light syrup made of sugar.
70. (c) Bhils are one of the tribal community of India. A large number of Bhils live in the neighbouring States of Maharashtra, Gujarat and Rajasthan. They constitute the third largest tribe of India.
71. (c) A cloud is made of water drops or ice crystals floating in the sky. The drops of water are too small to see. They have turned into a gas called water vapor. As the water vapor goes higher in the sky, the air gets cooler. The cooler air causes the water droplets to start to stick to things like bits of dust, ice or sea salt.
72. (b) Sindhi writer Vasdev Mohi conferred with 29th Saraswati Samman. He has been selected for this prestigious literary award for his short stories collection- Chequebook.
73. (c) Vijaya Lakshmi Pandit was the first female elected to 6th Governor of Maharashtra and 8th President of the United Nations General Assembly.
74. (c) Sweat glands are absent in the vermilion border of the lips, external ear canal, nail beds, clitoris and labia minora. The inability to sweat can cause overheating. It can affect the entire body.
75. (c) The young of a kangaroo is called a joey. Female kangaroos sport a pouch on their belly, made by a fold in the skin, to cradle baby kangaroos called joeys.

LANGUAGE

76. (d) Option (a) is correct as it is mentioned that most Gods thought of human as toys but Gods made friends with humans. In other words, it can be said that the Gods treated humans as their 'entertainment'.

Option (b) is wrong. However, it is mentioned that *'Prometheus was chained to a rock as punishment'* but not because he was a God.

Option (c) is correct as per the information as given in the passage. There is no direct mention about Zeus being an unforgiving God who did not like to be disobeyed. But it is written in the second paragraph that Zeus was furious because Prometheus had defied him. So that justifies the fact given in option (c).

Option (d) also stands correct as per the information given in the passage.

Read the last line of the given passage, *'It was Hercules who finally released the helpless God from his chains.'*

Hence, option (b) is not true about Zeus and Prometheus.

77. (c) Read the lines of first paragraph, *'The first people created by the Gods lived happily together. They thought the Gods were wonderful. But their children were not as grateful or as content. The children argued among themselves, and sometimes even argued with the Gods. Zeus was disappointed at mankind.'*

Hence, option (c) is the reason that Zeus was angry and disappointed at humans.

78. (d) The meaning of the underlined word: *'Prometheus had defied Zeus.'* is that Prometheus had disregarded the authority of Zeus. For clarification, read the lines of first paragraph, *'Zeus was very disappointed at mankind. He decided to punish mankind by depriving them of a very important tool-fire. Prometheus felt sorry for his human friends. Fire was important for many things such as heat and cooking. Prometheus stole a lightning bolt from Zeus and gave it to mankind.'*

In this was Prometheus defied Zeus.

To defy means to openly resist or refuse to obey. Hence, option (d) is the right answer choice.

79. (c) The news is all over the internet.
80. (c) We studied about the Roman Empire in school.

81. (b) There was no one else in the room except Collin.

82. (c) The correct sequence will be BDECA.

You must stay out of the sun.

83. (b) The correct sequence is AEDCB.

I want my salary immediately.

84. (d) 'Diseases' is a common noun. 'Diseases' are common nouns however diseases named after people/ inventors/ discoverers are proper noun e.g., Alzheimer's disease.

85. (c) After school you and I must discuss a few things.

There is a simple way to tell which one to use, by imagining the clause without the "you and" part:

Example: You and (I/me?) should spend more time together

Imagine: "Me should..." (this is clearly wrong)

Imagine: "I should..." (correct!)

Answer: You and I should spend more time together

Example: He should have spoken to you and (I/me?).

Imagine: "He should have spoken to me" (correct!)

Imagine: "He should have spoken to I" (wrong)

Answer: He should have spoken to you and me.

86. (c) It is quite warm, isn't it?

87. (a) The given sentence is a command hence, it is an imperative sentence.

88. (b) Near the equator, the sun evaporates greater quantities of water.

Simple Present tense is used when we talk about the **universal truth** or **fact**.

89. (c) 'Apartment' is the correct spelling here. Other words are misspelt.

90. (d) Today is the most important day of my life.

91. (c) Soar: to fly aloft or about.

(1) : to sail or hover in the air often at a great height : glide.

(2) of a glider : to fly without engine power and without loss of altitude

Sore: (of a part of one's body) painful or aching.

Sour: having an acid taste like lemon or vinegar.

Sure: completely confident that one is right.

92. (d) Exhausted means very tired.

OR (of resources or reserves) completely used up.

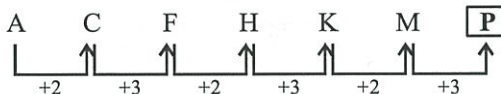
93. (c) A confectioner is a person who sells sweet.

94. (a) The captain was present along with the players.

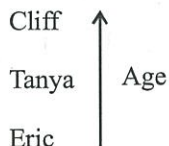
95. (b) The opposite of 'Mortal' is 'Immortal'.
Mortal: (of a living human being, often in contrast to a divine being) subject to death.
Immortal: living forever; never dying or decaying.
96. (b) **A pack of thieves was caught by the Police.**
A swarm of bees
A team of players
A batch of letters
97. (d) It has become his habit to **never** do his homework and then copy it from others.
98. (a) There were several **women** at the conference.
99. (b) To beat around the bush: To avoid getting to the point of an issue:
"Your worries have nothing to do with the new proposal.
Stop **beating** around the **bush**, and cast your vote!"
100. (c) The sentence is in present tense so the verb will be used with 's'. i.e. "**prefers**".
"My father is a bookworm; he prefers books to films and sports."

INTELLIGENCE TEST

101. (c) The series is as -

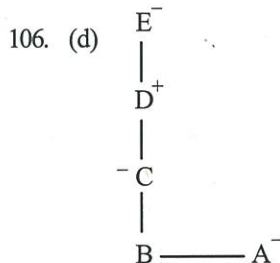
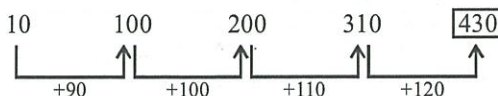


102. (c) Starting Point ————— End Point
- So, now he is heading towards south.
103. (c) These are the currency of country except 'Cyprus'.
The currency of Cyprus is 'Euro'.
104. (b) From first two statement :

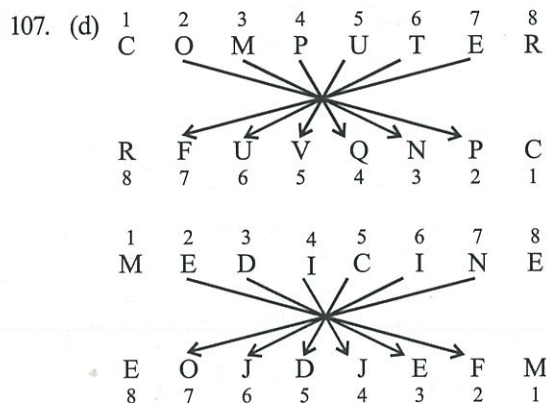


If first two statements are true, the third statement is 'False'.

105. (c) The pattern of the series is as :



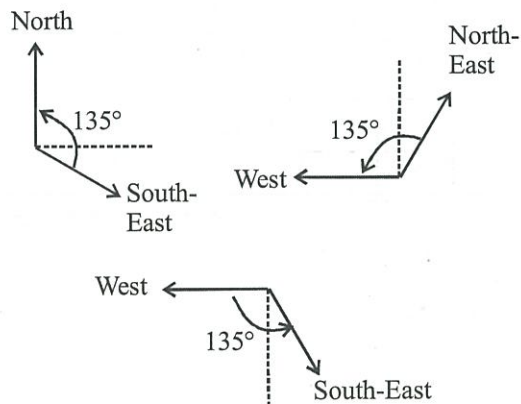
Where (-) shows Female and (+) shows Male.
So, A is the Grand-daughter of D.



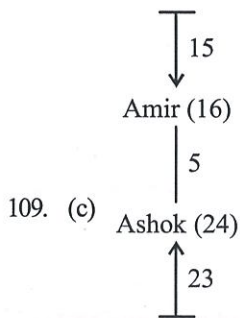
First of all exchange first and second letter with each other. Then, add 1 in second letter and put it on second last position.

Similarly the same order follow in the next letters.

108. (c)



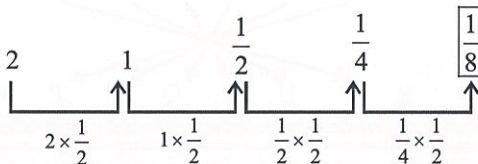
We can clearly see that the rotation is 135° anti-clock wise. So, West will become South-East.



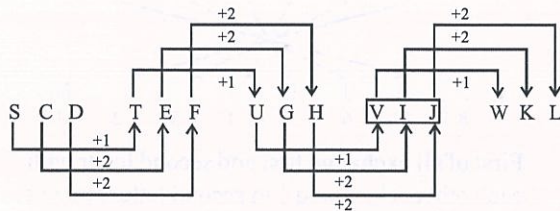
So, Ashok's Rank from bottom is 24th.

110. (d) a a b a b / a a b a b / a a b a b.

111. (b) The series is as :

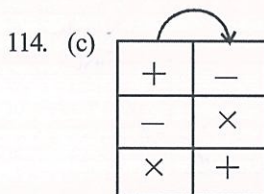


112. (c) The pattern is as :



113. (a)

W	A	Y	M	A	Y	Y	A	W
↓	↓	↓	↓	↓	↓	↓	↓	↓
6	7	9	5	7	9	9	7	6



$$10 \times 5 + 3 - 2 = ?$$

By exchanging the signs -

$$10 + 5 - 3 \times 2 = ?$$

$$\Rightarrow 15 - 6 = ? \Rightarrow ? = 9.$$

115. (b) As, Mend : Sewing

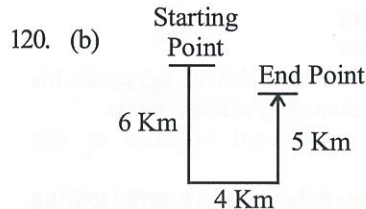
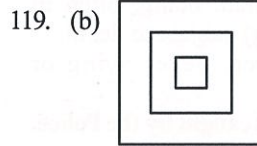
Similarly, Edit : Repair.

116. (c) A rider uses a Rein to guide a Horse;
A pilog uses the Control Panel to guide a Plane.

117. (a) All ohter are social media platforms, except MS Paint.

MS Pain is a graphics editor.

118. (d) "Strings" is a necessary part of the Guitar.



So, now he is facing in North direction.

121. (d) The pattern is as :

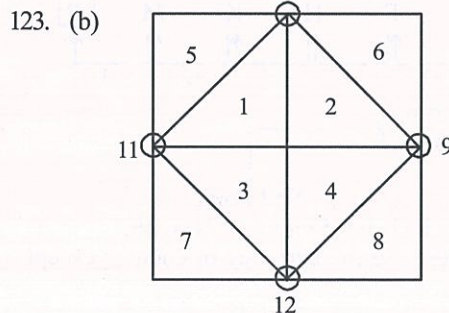
$$E(5) + H(8) = M(13)$$

$$N(14) + A(1) = O(15)$$

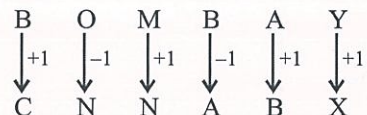
$$I(9) + D(4) = \boxed{M}(13)$$

122. (c) The bell rings at regular intervals of 45 minutes.

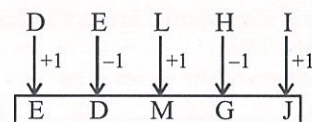
If last bell rang 5 minutes ago and next bell is due to be rung at 7:45 am then, the Priest give this information to the devotee at 7:05 am.



124. (d) As,



Similarly,

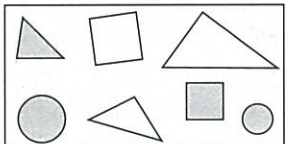


125. (c) As Unify is the Antonyms of Segregate;
Similarly Damage is the Antonyms of Repair.

Sainik School Entrance Exam Solved Paper-2020

(Class-VI)

MATHEMATICS

1. Find the difference between the greatest and the least number that can be written using the digits 6, 2, 7, 4, 3 each only once.
 (a) 52965 (b) 53965
 (c) 52956 (d) 52659
2. Estimate the product 5980×428 by rounding off each number to the nearest hundreds.
 (a) 236000 (b) 240000
 (c) 2400000 (d) 3000000
3. Three numbers are in the ratio of 3 : 4 : 5 and their LCM is 2400. Their HCF is:
 (a) 120 (b) 60 (c) 80 (d) 40
4. Leela reads 25 pages of a book containing 100 pages. Lalita read $\frac{2}{5}$ of the same book. Who read less and by how much?
 (a) Leela, 15 pages (b) Lalita, 16 pages
 (c) Leela, 20 pages (d) Lalita, 20 pages
5. $\left(\frac{\sqrt{625}}{11} \times \frac{14}{\sqrt{25}} \times \frac{11}{\sqrt{196}} \right)$ is equal to
 (a) 5 (b) 6 (c) 8 (d) 11
6. Naveen bought 3 m 20 cm cloth for his shirt and 2 m 5 cm cloth for his trousers. Find the total length of cloth bought by him.
 (a) 5.7 m (b) 5.25 m
 (c) 4.25 m (d) 5.00 m
7. The least common multiple of 3, 4 and 9 is:
 (a) 36 (b) 12
 (c) 27 (d) 45
8. An aeroplane covers a certain distance at a speed of 240 km/h in 5 hours. To cover the same distance in $1\frac{2}{3}$ hours, it must travel at a speed of?
 (a) 300 km/h (b) 360 km/h
 (c) 600 km/h (d) 720 km/h
9. 'A' can lay railway track between two given stations in 16 days and 'B' can do the same job in 12 days. With the help of 'C', they did the job in 4 days only. Then, 'C' alone can do the job in how many days?
 (a) $9\frac{1}{5}$ days (b) $9\frac{2}{5}$ days
 (c) $9\frac{3}{5}$ days (d) $9\frac{4}{5}$ days
10. In the figure, find the ratio of Number of triangles to the number of circles inside the rectangle and Number of squares to all the figures inside the rectangle.

 (a) $\frac{3}{2}, \frac{2}{7}$ (b) $\frac{3}{7}, \frac{2}{7}$
 (c) $\frac{2}{7}, \frac{2}{7}$ (d) 3, 2
11. Ram, Rahul and Rohit shared a bag of marbles. The bag contained 272 marbles. How many marbles were left over after the friends shared them equally?
 (a) 90 (b) 91
 (c) 6 (d) 2
12. Cost of 4 dozens of bananas is ₹ 60. How many bananas can be purchased for ₹ 12.50?
 (a) 10 (b) 15
 (c) 12 (d) 18
13. The average weight of 16 boys in a class is 50.25 kg and that of the remaining 8 boys is 45.15 kg. Find the average weight of all the boys in the class.
 (a) 47.55 kg (b) 48 kg
 (c) 48.55 kg (d) 49.25 kg

14. Manju runs around a rectangular park of length 35 m and breadth 20 m. Meenu runs around a square park of side 30 m. Who covers less distance any by how much, if Meenu takes 4 rounds and Manju takes 3 around completely.

(a) Meenu, 150 m (b) Manju, 120 m
(c) Manju, 150 m (d) Meenu, 120 m

15. A photo frame is in the shape of quadrilateral with one diagonal longer than the other. Which of the following is the possible shape of the photo frame?

(a) Square (b) Rectangle
(c) Rhombus (d) None of these

16. The product of a non-zero whole number and its successor is always :

(a) Divisible by 3 (b) An odd number
(c) A prime number (d) An even number

17. A sum fetched a total simple interest of ₹ 4016.25 at the rate of 9% in 5 years. What is the sum?

(a) ₹ 4462 (b) ₹ 8032
(c) ₹ 8900 (d) ₹ 8925

18. Find the angle measure between the hands of the clock when time shows 6 PM.

(a) 90° (b) 45°
(c) 180° (d) 270°

19. Find the volume of a cube of side 6 cm:

(a) 216 cm³ (b) 360 cm³
(c) 72 cm³ (d) 108 cm³

20. Write Roman numerical CDXXXIX in Arabic numeral.

(a) 439 (b) 449
(c) 529 (d) 539

21. The product of two numbers is 1296. If one number is 16 times the other, find the smaller number.

(a) 12 (b) 16 (c) 4 (d) 9

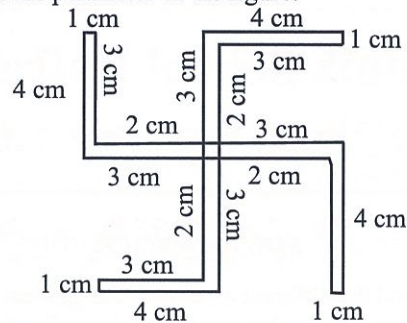
22. The measure of an angle is $\frac{3}{4}$ of 60°. What is the measure of its complementary angle?

(a) 30° (b) 60° (c) 45° (d) 20°

23. Subtract the difference of 8.362 and 7.942 from the sum of 5.675 and 1.327.

(a) 6.582 (b) 4.348
(c) 3.982 (d) 4.384

24. Find the perimeter of the figure:



(a) 51 cm (b) 52 cm
(c) 53 cm (d) 54 cm

25. How much time will it take for an amount of ₹ 450 to yield ₹ 81 as interest at 4.5% per annum of simple interest?

(a) 3 years (b) 4 years
(c) 6 years (d) 5 years

26. In a triangle, if the second angle is 2 times the first angle and the third angle is 3 times the first angle, find the angles of the triangle.

(a) 30°, 60°, 90°
(b) 15°, 30°, 45°
(c) 45°, 45°, 90°
(d) 20°, 40°, 120°

27. The area of a circle is 616 cm². Find its diameter.

$$\left(\pi = \frac{22}{7} \right)$$

(a) 28 cm (b) 14 cm
(c) 56 cm (d) 32 cm

28. Find the quotient when 53.016 is divided by 24.

(a) 2.29 (b) 2.209
(c) 2.292 (d) 2.029

29. A rectangular path of 60 m length and 3 m width is covered by square tiles of side 25 cm. Find the number of tiles used to make this path?

(a) 2250 (b) 1440
(c) 2880 (d) 1200

30. What is the value of A in $475 + 64\% \text{ of } 950 = 900 + A$.

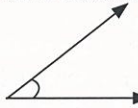
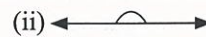


(a) 183 (b) 233
(c) 1983 (d) None of the above

31. What will be HCF of 216, 288 and 720?

(a) 12 (b) 24
(c) 84 (d) 72

32. Solve $(106 \times 106 - 94 \times 94) = ?$

(a) 2400 (b) 2000
(c) 1904 (d) 1906

33. If $\frac{2}{3}$ of 70% of 600 when subtracted from a number is 320, what is the number?
 (a) 300 (b) 600
 (c) 720 (d) 500
34. A mobile phone is sold for ₹1650 after purchasing it for ₹1500. What is the percentage of profit?
 (a) 10 (b) 15
 (c) 20 (d) 16
35. In the first test of mathematics a student gets 18 marks out of 25. In the second test of same weightage he got 22 marks. What percentage of marks did he get more in the second test?
 (a) 4% (b) 8%
 (c) 16% (d) None of the above
36. Average of 20 results is 18. If 3 is subtracted from each result, then what will be the new average?
 (a) 21 (b) 15
 (c) 16 (d) 17
37. Solve $\frac{\frac{7}{3} \times \frac{2}{3} + \frac{3}{5}}{2 + 1\frac{2}{3}}$:
 (a) $\frac{99}{70}$ (b) $\frac{70}{99}$
 (c) $\frac{33}{30}$ (d) $\frac{70}{27}$
38. If 90.0675 is divided by 15, then quotient is:
 (a) 6.0045 (b) 6.0450
 (c) 60.0450 (d) 0.6045
39. How many second are there in 24 hours?
 (a) 30 (b) 60
 (c) 3600 (d) 86400
40. $\sqrt{1089 \div 121}$ value is:
 (a) 3 (b) 13
 (c) 33 (d) 53
41. If angles A, B and C in a triangle ABC are $3x$, $5x$ and $8x + 4$ respectively, then find all the three angles.
 (a) 33, 55, 92 (b) 70, 75, 35
 (c) 90, 75, 15 (d) 90, 95, 100
42. What are Prime factors of 37800?
 (a) $2 \times 2 \times 3 \times 3 \times 5 \times 5 \times 7 \times 7$
 (b) $2 \times 2 \times 2 \times 3 \times 3 \times 3 \times 5 \times 5 \times 7$
 (c) $8 \times 27 \times 25 \times 7$
 (d) $2 \times 4 \times 25 \times 27 \times 7$
43. (10% of 3.75 + 15% of 7.25) convert into decimal:
 (a) 1.4625 (b) 14.625
 (c) 1.4652 (d) 14.652
44. Which sequence correctly matches these angles with their measures:
 (i)  (ii) 
 (iii)  (iv) 
 (a) (i), (iii), (iv), (ii) (b) (i), (ii), (iii), (iv)
 (c) (iv), (iii), (ii), (i) (d) (i), (iv), (iii), (ii)
45. I am a prime number. If you subtract 2 from me, I become divisible by 7.
 (a) 29 (b) 19
 (c) 31 (d) 23

Directions (Qs. No. 46 to 50): The following table has to be consulted.

Name of the city	Temp. at 3 AM (°C)	Temp. at 3 PM (°C)
Chennai	21.1	29.9
Mumbai	19.0	35.1
Thiruvananthapuram	21.6	33.5
Kolkata	13.1	26.5
Bhopal	9.8	25.9
Srinagar	1.3	8.1
Guwahati	12.8	24.8
Jaipur	10.2	23.2

46. Which place had the highest temperature at 3 AM?
 (a) Chennai
 (b) Thiruvananthapuram
 (c) Srinagar
 (d) Jaipur
47. Which place is the coolest at 3 PM?
 (a) Kolkata (b) Srinagar
 (c) Mumbai (d) Bhopal
48. How much higher is the temperature in Mumbai from that of Srinagar at 3 PM?
 (a) 8.1 (b) 35.1
 (c) 27 (d) 29
49. How many degrees will the temperature at 3 AM need to rise for it to reach 40 degree celsius in Thiruvananthapuram.
 (a) 6.5 (b) 18.4
 (c) 21.6 (d) 33.5

50. How much lower is the temperature of Kolkata from that in Chennai at both times (3 AM and 3 PM)?
 (a) 8° and 3.3° (b) 3° and 8°
 (c) 8° and 8° (d) 3.3° and 3.3°

GENERAL KNOWLEDGE

51. Black Soil is also known as?
 (a) Regur Soil (b) Red Soil
 (c) Laterite Soil (d) Mountain Soil
52. P.V. Sindhu is associated with which sports?
 (a) Badminton (b) Cricket
 (c) Football (d) Hockey
53. The Space Programme of Govt. of India is looked after by:
 (a) ISBT (b) NTRO
 (c) NABARD (d) ISRO
54. Bhakra-Nag Project is built on the river?
 (a) Sutlej (b) Mahanandi
 (c) Godavari (d) Cauvery
55. Who is known as a 'Iron Man' of India?
 (a) Jawahar Lal Nehru
 (b) Mahatma Gandhi
 (c) Sardar Vallabhbhai Patel
 (d) Subhash Chandra Bose
56. The longest river in South India is?
 (a) Mahanandi (b) Indus
 (c) Saraswati (d) Godavari
57. Which planet is known as a morning star as well as evening star?
 (a) Mars (b) Venus
 (c) Mercury (d) Earth
58. Which Article of constitution provides Indian Citizen 'Right to Equality'?
 (a) Article 12 (b) Article 13
 (c) Article 17 (d) Article 14
59. 'Narora' nuclear power plant is located in the state of?
 (a) Maharashtra (b) Tamil Nadu
 (c) Uttar Pradesh (d) West Bengal
60. Which of the following diseases spreads through contaminated food and water?
 (a) Malaria (b) Cholera
 (c) Dengue (d) Filariasis
61. Which is biggest desert in the World?
 (a) Kalahari Desert (b) Atakam Desert
 (c) Sahara Desert (d) Gobi Desert
62. Manas national park is located in the state of?
 (a) Assam
 (b) Arunachal Pradesh
 (c) Himachal Pradesh
 (d) Andhra Pradesh
63. Which of these grows from the roots?
 (a) Potato (b) Ginger
 (c) Carrot (d) Sweet Potato
64. Sahyadris is also known as?
 (a) Aravali (b) Western Ghats
 (c) Himadri (d) Eastern Ghats
65. The gas filled in a weather balloons is:
 (a) Neon (b) Helium
 (c) Argon (d) Oxygen
66. Growing children need more of:
 (a) Carbohydrates (b) Vitamins
 (c) Proteins (d) Fats
67. Which gas is dissolved under pressure in soft drinks?
 (a) Oxygen (b) Carbon dioxide
 (c) Nitrogen (d) Hydrogen
68. Who is the lowest ranked Air Force Officer among these?
 (a) Wing Commander (b) Group Captain
 (c) Flying officer (d) Flight lieutenant
69. Which of the following is a national festival?
 (a) Baisakhi (b) Republic day
 (c) Pongal (d) Chhath puja
70. Dr. Amartya Sen won Nobel Prize in which field?
 (a) Economics (b) Peace
 (c) Chemistry (d) Literature
71. The imaginary line drawn half way between North Pole and South Pole is called:
 (a) Tropic of Cancer (b) Equator
 (c) Arctic Circle (d) Antarctic Circle
72. The largest island in the world is:
 (a) Australia (b) New Zealand
 (c) Greenland (d) Mozambique
73. The coldest place in world, lying in the south frigid zone is
 (a) Greenland (b) Antarctica
 (c) Australia (d) New Zealand
74. Who invented telephone in 1876?
 (a) Alexander Graham Bell
 (b) James Hickey
 (c) Guglielmo Macron
 (d) Logie Baird
75. 'Ghoomar' is a popular folk dance of which of the following states?
 (a) Rajasthan (b) Madhya Pradesh
 (c) Odisha (d) Uttar Pradesh

LANGUAGE

Direction (Qs. No. 76 to 80) : Read the following passage and answer the questions:

Midas, the king, was a greedy person. He loved gold more than anything in the world. He had lots of wealth but he was never really a happy person.

One day God Bacchus came to Midas. Midas had once helped god Bacchus and in return Bacchus offered him a gift. "What shall I give you to make you happy," God asked him, Midas thought for a while and then said, "Please give me the power to turn everything I touch into gold." Bacchus laughed and said. "Your wish is granted. As soon as the Sun rises tomorrow, you will have the golden touch."

The next morning Midas woke up, and he had his golden touch. He touched his bed, the chairs, doors, windows and all became gold.

Suddenly, he felt very hungry. He sat at the table but as soon as the food touched his lips. It turned into gold. So did the water, it seemed he could no longer eat or drink. After some time, his daughter came to him, when he put his hand on her, she became a gold statue. In the end, Midas became very sad and prayed God Bacchus to take away the golden touch from him.

76. What kind of man was Midas?
 (a) a greedy person (b) a great miser
 (c) a brave man (d) wise man
77. Who came to Midas one day?
 (a) God Jesus (b) God Bacchus
 (c) God Zeus (d) God
78. Why did Bacchus offer him a gift?
 (a) because he had helped God once
 (b) because he had pleased Bacchus
 (c) because he had annoyed Bacchus
 (d) because he cared for Bacchus
79. What was Midas' wish?
 (a) To become rich
 (b) To turn anything into gold
 (c) To turn his daughter a golden doll
 (d) To become powerful
80. Who turned into gold statue when Midas touched?
 (a) daughter (b) son
 (c) uncle (d) aunt

Rearrange the following words/phrases to make meaningful sentences. Choose the correct sequence.

81. it (a)/ life is (b)/ what we (c)/ make (d)
 (a) abcd (b) cdab
 (c) dabc (d) bcda
82. gold (a)/ in not (b)/ gli Hers (c)/ all that (d)
 (a) abcd (b) cdab
 (c) dabc (d) dcba
83. playing (a)/ in the (b)/ park (c)/ children are (d)
 (a) abcd (b) bcda
 (c) dabc (d) cdab

Fill in the blanks with the appropriate option.

84. Either work hard _____ give up studies.
 (a) nor (b) or
 (c) and (d) but
85. He is afraid _____ the dog.
 (a) on (b) of (c) in (d) by
86. He _____ tea every morning.
 (a) drinks (b) is drinking
 (c) drank (d) drunk
87. The child has been missing _____ yesterday.
 (a) for (b) of
 (c) by (d) since
88. John is my _____ brother. (Find out the correct adjective)
 (a) elder (b) bigger
 (c) old (d) young
89. French is _____ easy language. (Select the correct article)
 (a) a (b) an
 (c) the (d) none
90. Ashok _____ him yesterday. (Write the correct form of the verb)
 (a) meet (b) met
 (c) will meet (d) is meeting

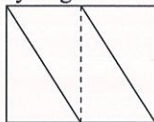
Choose the most appropriate option.

91. Which word mean nearly the same an 'Sufficient'?
 (a) infinite (b) adequate
 (c) merry (d) surplus
92. Which word is the opposite of 'simple'.
 (a) complex (b) easy
 (c) obey (d) show
93. A list of books in a library.
 (a) monologue (b) dialogue
 (c) catalogue (d) diary
94. Find the feminine gender of 'horse'.
 (a) mare (b) doe
 (c) ewe (d) ram
95. Choose the word which means the opposite of 'RISE'.
 (a) fall (b) smooth
 (c) pride (d) rash

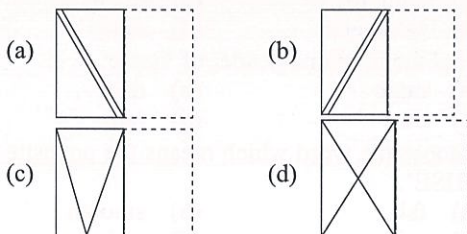
96. Choose the word which means same as 'GRIEF'.
 (a) cheerful (b) sorrow
 (c) happy (d) injury
97. One who does not believe in existence of God.
 (a) theist (b) pacifist
 (c) ascetic (d) atheist
98. The match has been postponed _____ it has been raining outside. (Supply Conjunction)
 (a) so (b) because
 (c) therefore (d) and
99. This is the boy _____ parents have died. (Supply correct Pronoun)
 (a) whose (b) who
 (c) whom (d) his
100. He doesn't help the poor, _____ ? (Use Question Tag)
 (a) did he (b) does he
 (c) doesn't (d) do he

INTELLIGENCE TEST

101. If CATTLE is related to HERD then SHEEP is related to _____.
 CATTLE : HERD :: SHEEP : ?
 (a) FLOCK (b) SWARM
 (c) SHOAL (d) MOB
102. Choose the alternative that has the same relationship to 09 as 07 has with 56.
 07 : 56 :: 09 : ?
 (a) 54 (b) 81
 (c) 72 (d) 99
103. Choose the alternative that will continue the number series below:
 5, 11, 17, 23, ?
 (a) 31 (b) 29
 (c) 28 (d) 35
104. If you fold the transparent paper along the dotted line in Figure 'X' which alternative figure from A, B, C and D would you get?

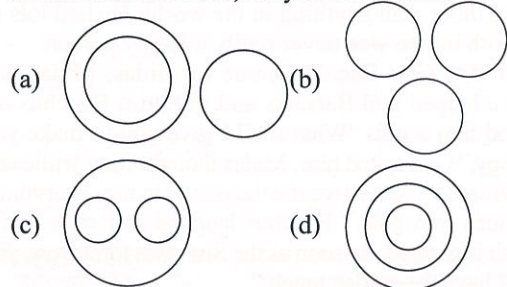


(X)



105. Choose the word which is least like the other words in the group.
 (a) BAKE (b) PEEL
 (c) FRY (d) ROAST

106. Which of the following diagrams indicate the best relation between India, Haryana and World?



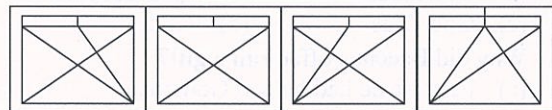
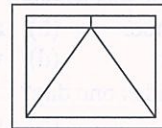
107. Choose the word which is least like the other words in the group.

- (a) VIRGO (b) PISCES
 (c) CANCER (d) ORION

108. If STATEMENT is coded as TNEMETATS then POLITICAL will be coded as:

- (a) LACITILOP (b) LCATILIOIP
 (c) OPILITACL (d) LACITIPOL

109. Figure 'X' is embedded in any one of the four alternative, figures (a), (b), (c) and (d). Find the alternative which contains figure 'X' as its part.



(i) (ii) (iii) (iv)

- (a) (i) (b) (ii)
 (c) (iii) (d) (iv)

110. If 'A' means add, 'B' means subtract, 'C' means multiply and 'D' means divide, then what would be the answer of the equation?

$$15 D 5 C 2 A 3 =$$

- (a) 13 (b) 11
 (c) 03 (d) 09

111. Five men (i), (ii), (iii), (iv) and (v) read a newspaper. The one who reads first gives it to (iii). The one who reads last had taken from (i), (v) was not the first or last to read. There were two readers between (ii) and (i). Who read the newspaper last?

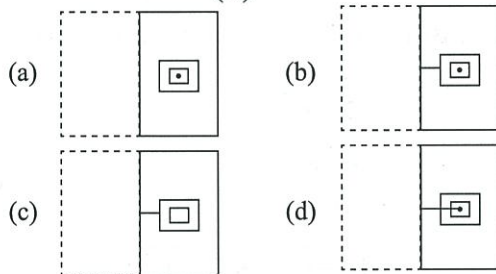
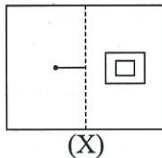
- (a) (i) (b) (ii)
(c) (iii) (d) (iv)

112. Choose the alternative that has the same relationship to 16 as 12 has with 168.

$$12 : 168 :: 16 : ?$$

- (a) 232 (b) 256
(c) 224 (d) 208

113. If you fold the transparent paper along the dotted line Figure 'X' which alternative figure would you get?



114. If in a certain code DEAF is written as 3587 and FILE is written as 7465 then IDEAL will be written as?

- (a) 43568 (b) 43586
(c) 63548 (d) 48536

115. Choose the word which is least like the other words in the group.

- (a) PLASTIC (b) WOOL
(c) PAPER (d) WOOD

116. If we arrange the given words in alphabetical order, which word would come at last place, choose the correct alternative?

- (a) ROBBER
(b) RANDOM
(c) RESTRICT
(d) RESTAURANT

117. Choose the alternative that will continue the number series below:

$$11, 13, 17, 19, 23, 25, ?$$

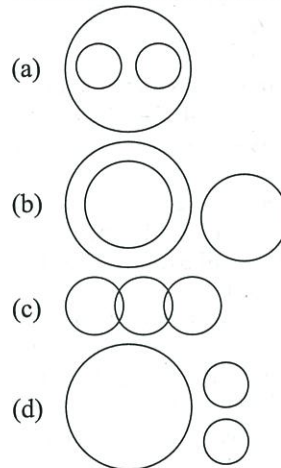
- (a) 27 (b) 29
(c) 31 (d) 33

118. Choose the correct alternative that has the same relation to BMJ as HSY is to EPV.

$$BMJ : ? :: EPV : HSY$$

- (a) DRM (b) YJG
(c) EPM (d) EON

119. Which of the following diagrams indicates the best relation between Flower, Lotus and Rose?



120. Choose the alternative that has the same relationship to 11 as 49 has with 07.

$$07 : 49 :: 11 : ?$$

- (a) 111 (b) 90 (c) 81 (d) 121

121. Choose the word which is least like the other words in the group.

- (a) GREEN (b) PINK
(c) INDIGO (d) VIOLET

122. If X is the brother of the son of Y's son, how is X related to Y?

- (a) Son (b) Brother
(c) Grandson (d) Cousin

123. Area of rectangle is 48 m^2 . If the length is 6 m then breadth = _____.

- (a) 13 m (b) 6 m
(c) 10 m (d) 8 m

124. The priest told the devotee, "The temple bell is rung at regular intervals of 45 minutes. The last bell was rung 5 minutes ago. The next bell is due to be rung at 7 : 45 AM." At what time did the priest give this information to the devotee?

- (a) 7:00 AM (b) 7:05 AM
(c) 6:55 AM (d) 7:40 AM

125. If in a certain code MBS is coded as ODU then BRL will be coded as?

- (a) DTN (b) DUN
(c) CSM (d) CTN

Solutions

MATHEMATICS

1. (a) Greatest number using the digits 6, 2, 7, 4, 3 each only once = 76432

And, least number = 23467

∴ Difference of numbers = greatest number – least number = 76432 – 23467 = 52965

2. (c) Given product $5980 \times 428 = 6000 \times 400 = 2400000$

In option (c) 2400000, the nearest hundreds.

3. (d) Let three numbers are $3x$, $4x$ and $5x$

Then LCM = $60x$ (LCM of $3x$, $4x$ and $5x$)

$$\Rightarrow 2400 = 60x \Rightarrow x = 40$$

∴ Three numbers are 3×40 , 4×40 , 5×40

∴ HCF = 40 [HCF = least common]

4. (a) Total number of pages of a book = 100

Number of pages read by Lalita = $\frac{2}{5}$ of a book

$$= \frac{2}{5} \times 100 = 40 \text{ and Leela} = 25$$

∴ Lalita reads pages – Leela reads pages

$$= 40 - 25 = 15$$

Here, Leela reads 15 pages less than Lalita.

5. (a) $\frac{\sqrt{625}}{11} \times \frac{14}{\sqrt{25}} \times \frac{11}{\sqrt{196}} = \frac{25}{11} \times \frac{14}{5} \times \frac{11}{14}$

$$[\sqrt{625} = 25, \sqrt{25} = 5, \sqrt{196} = 14]$$

$$= \frac{25}{5} = 5$$

6. (b) The total length of cloth = 3m 20 cm + 2 m 5 cm

$$= 5 \text{ m } 25 \text{ cm}$$

$$= 5 \text{ m} + \frac{25}{100} \text{ m} = 5.25 \text{ m}$$

7. (a) $3 = 3 \times 1$

$$4 = 2 \times 2 = 2^2$$

$$9 = 3 \times 3 = 3^2$$

$$\text{LCM} = 2^2 \times 3^2$$

$$= 4 \times 9 = 36.$$

8. (d) Speed of an aeroplane = 240 km/h

and time = 5 hours

$$\therefore \text{distance cover} = 240 \times 5 = 1200 \text{ km}$$

Now to cover the same distance in $1\frac{2}{3} = \frac{5}{3}$ hours

$$\therefore \text{Speed} = \frac{\text{Distance}}{\text{Time}}$$

$$= \frac{1200}{1\frac{2}{3}} = \frac{1200}{\frac{5}{3}}$$

$$= 1200 \times \frac{3}{5} = 240 \times 3 = 720 \text{ km/h}$$

$$\therefore \text{Speed} = 720 \text{ km/h.}$$

9. (c) Let C can lay railway track in x days

Then C can lay railway track in 1 day = $\frac{1}{x}$

∴ By question, work done by them in one day,

$$\frac{1}{16} + \frac{1}{12} + \frac{1}{x} = \frac{1}{4}$$

$$\Rightarrow \frac{3+4}{48} + \frac{1}{x} = \frac{1}{4} \Rightarrow \frac{7}{48} + \frac{1}{x} = \frac{1}{4}$$

$$\Rightarrow \frac{1}{x} = \frac{1}{4} - \frac{7}{48} = \frac{12-7}{48} = \frac{5}{48}$$

$$\Rightarrow \therefore x = \frac{48}{5} = 9\frac{3}{5} \text{ days}$$

$$\frac{3}{5}$$

Hence, C alone can do the job in $9\frac{3}{5}$ days.

10. (a) The number of triangles inside the rectangle = 3

and the number of circles inside the rectangle

$$= 2$$

∴ Ratio of the number of triangles and circles

$$= \frac{3}{2}$$

and the number of squares inside the rectangle = 2

and, the number of all the figures inside the rectangle = 7

∴ Ratio of the number of squares and all figures

$$= \frac{2}{7}$$

$$\text{Hence, ratio is } \frac{3}{2}, \frac{2}{7}$$

11. (d) Total number of Marbles in the bag = 272

∴ Ram, Rahul and Rohit shared then equally

$$\therefore 3 \mid 272 \mid 90$$

$$\quad \quad \quad \mid -270 \mid$$

2

$\therefore 272 = 3 \times 90 + 2$, Here, $272 - 3 \times 90 = 2$

\therefore Marbles were left after share = 2.

12. (a) ₹ 60 cost = 4 dozens of bananas

$$= 4 \times 12 \text{ bananas}$$

\therefore ₹ 60 cost = 48 bananas

$$\therefore \text{₹ 1 cost} = \frac{48}{60} \text{ bananas}$$

$$\begin{aligned} \therefore \text{₹ 12.50 cost} &= \frac{48}{60} \times 12.50 \text{ bananas} \\ &= \frac{48}{6000} \times 1250 = \frac{48}{600} \times 125 \\ &= \frac{4}{50} \times 125 = \frac{4}{2} \times 5 \\ &= 2 \times 5 = 10 \text{ bananas.} \end{aligned}$$

Hence, 10 bananas can be purchased for ₹ 12.50.

13. (c) As, the average weight of 16 boys = 50.25 kg

So, the total weight of 16 boys = 16×50.25 kg

and, the average weight of 8 boys = 45.15 kg

\therefore The total weight of 8 boys = 8×45.15 kg

\therefore The average weight of all the boys in the class

$$= \frac{\text{The total weight of all the boys}}{\text{The total number of all the boys}}$$

$$= \frac{16 \times 50.25 + 8 \times 45.15}{24}$$

$$= \frac{804.00 + 361.20}{24}$$

$$= \frac{1165.20}{24} = 48.55 \text{ kg.}$$

14. (c) From question, we have rectangular park,

$$\text{Length} = 35 \text{ m}$$

$$\text{Breadth} = 20 \text{ m}$$

$$\therefore \text{Perimeter} = 2(l + b)$$

$$= 2(35 + 20)$$

$$= 2 \times 55 = 110 \text{ m}$$

\therefore Manju takes 3 rounds a rectangular park

\therefore Distance covered by Manju = $3 \times \text{perimeter}$

$$= 3 \times 110 \text{ m}$$

$$= 330 \text{ m}$$

And, Meenu runs on square park

Length of side = 30 m

$$\therefore \text{Perimeter} = 4 \times \text{side} = 4 \times 30 = 120 \text{ m}$$

Meenu takes 4 rounds a square park

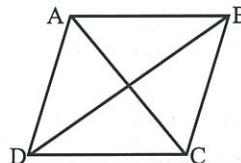
$$\therefore \text{Meenu covers distance} = 4 \times \text{perimeter}$$

$$= 4 \times 120 \text{ m} = 480 \text{ m}$$

Hence, Manju covers less distance by

$$= 480 - 330 \text{ m} = 150 \text{ m.}$$

15. (c) A quadrilateral with one diagonal longer than the other.



Here, in figure

$BD > AC$, and all sides equal.

\therefore Quadrilateral is a rhombus

16. (d) Product of non-zero whole number and its successor is always an even number. As two consecutive numbers are pair of odd and even numbers. Thus, its product is always an even number.

17. (d) \therefore Simple interest = ₹ 4016.25
 $r = 9\%$, $t = 5$ years $\therefore p = ?$

$$\therefore \text{S.I.} = \frac{P \times t \times r}{100}$$

$$\Rightarrow 4016.25 = \frac{p \times 5 \times 9}{100}$$

$$\therefore p = \frac{4016.25 \times 100}{5 \times 9}$$

$$\therefore p = \frac{401625}{5 \times 9} = \frac{80325}{9} = 8925$$

Hence, $p = \text{sum} = ₹ 8925$.

18. (c) The angle measure between the hands of the clock when time show 12 AM = 360°
and the angle measure between the hands in 12 hours = 360°

$$\therefore 1 \text{ hour} = \frac{360^\circ}{12} = 30^\circ$$

$$\therefore 6 \text{ hours} = 30^\circ \times 6 = 180^\circ$$

\therefore The angle measures between the hands when time shows 6 PM = 180° .

19. (a) Side of the given cube = 6 cm

\therefore The volume of a cube

$$= (\text{side})^3 = (6 \text{ cm})^3 = 216 \text{ cm}^3.$$

20. (a) Roman numeral CDXXXIX
Arabic numeral 439.

21. (d) Let the smaller number = x

Then, one number = $16x$

One no. \times other no. = product of no.'s

$$\therefore x \times 16x = 1296$$

$$\Rightarrow 16x^2 = 1296$$

$$\Rightarrow x^2 = \frac{1296}{16} = \frac{162}{2} = 81$$

$$\Rightarrow x^2 = 81$$

$$\Rightarrow x = \sqrt{81}$$

$$\Rightarrow x = 9$$

Hence, smaller number = $x = 9$.

22. (c) The measure of an angle

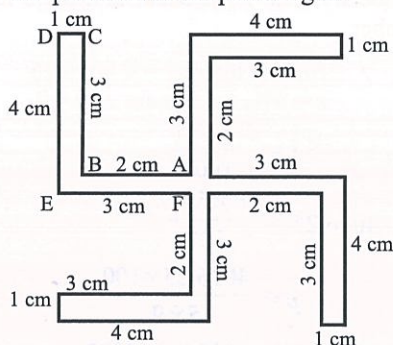
$$= \frac{3}{4} \times 60 = 45^\circ$$

\therefore Complementary of $45^\circ = 90 - 45^\circ = 45^\circ$.

23. (a) $(5.675 + 1.327) - (8.362 - 7.942)$

$$= 7.002 - 0.42 = 6.582.$$

24. (b) The perimeter of one part of figure



$$= AB + BC + CD + DE + EF$$

$$= (2 + 3 + 1 + 4 + 3) \text{ cm}$$

$$= 13 \text{ cm}$$

\therefore The perimeter of the figure

$$= 4 \times 13 \text{ cm} = 52 \text{ cm}.$$

25. (b) Here, Principle = ₹ 450, Rate = 4.5%.

Simple interest = ₹ 81

$$\therefore \text{time} = \frac{\text{S.I.} \times 100}{P \times R}$$

$$= \frac{81 \times 100}{450 \times 4.5} = \frac{81 \times 1000}{450 \times 45}$$

$$= \frac{9 \times 100}{45 \times 5} = \frac{1 \times 20}{5} = 4 \text{ years}.$$

26. (a) Let the first angle is x° in a triangle

Then, the second angle = $2x$

and, the third angle = $3x$

As, sum of the angles in a triangle is 180° .

$$\text{So, } x^\circ + 2x^\circ + 3x^\circ = 180^\circ$$

$$\Rightarrow 6x^\circ = 180^\circ$$

$$\Rightarrow x^\circ = \frac{180^\circ}{6} = 30^\circ$$

$$\Rightarrow x^\circ = 30^\circ$$

\therefore Angles are $x = 30^\circ$, $2x = 60^\circ$, $3x = 90^\circ$

27. (a) The area of a circle = 616 cm^2

$$\therefore \pi r^2 = 616 \text{ cm}^2$$

$$\Rightarrow \frac{22}{7} r^2 = 616 \text{ cm}^2$$

$$r^2 = \frac{616}{\frac{22}{7}} = \frac{616}{22} \times 7 = 28 \times 7$$

$$\Rightarrow r^2 = 28 \times 7 = 4 \times 7 \times 7$$

$$\Rightarrow r^2 = (2 \times 7)^2$$

$$\Rightarrow r = 2 \times 7 = 14 \text{ cm}$$

\therefore Diameter = $2r = 2 \times 14 \text{ cm} = 28 \text{ cm}$.

28. (d) 53.016 is divide by 24.

$$\therefore \frac{53.016}{24} = 2.209$$

$$\therefore \text{quotient} = 2.209$$

29. (c) A rectangular path

$$\text{length} = 60 \text{ m} = 60 \times 100 = 6000 \text{ cm}$$

$$\text{and width} = 3 \text{ m} = 3 \times 100 = 300 \text{ cm}$$

$$\therefore \text{Area of path} = l \times b = 6000 \times 300 \text{ cm}^2$$

$$= 18,00,000 \text{ cm}^2$$

and, Side of square tile = 25 cm

$$\text{Area of tiles} = (\text{side})^2$$

$$= (25)^2 = 625 \text{ cm}^2$$

The number of tiles used to make this path.

$$= \frac{\text{area of park}}{\text{area of tile}}$$

$$= \frac{18,00,000}{625} = \frac{72,000}{25}$$

$$= \frac{720 \times 100}{25} = 720 \times 4 = 2880$$

Hence, the number of tiles = 2880.

30. (a) $475 + 64\% \text{ of } 950 = 900 + A$

$$\Rightarrow 475 + 950 \times \frac{64}{100} = 900 + A$$

$$\Rightarrow 475 + 950 \times \frac{16}{25} = 900 + A$$

$$\Rightarrow 475 + 38 \times 16 = 900 + A$$

$$\Rightarrow 475 + 608 = 900 + A$$

$$\Rightarrow 1083 = 900 + A$$

$$\Rightarrow A = 1083 - 900$$

$$\Rightarrow A = 183$$

31. (d) HCF of 216, 288 and 720

$$\begin{array}{r}
 216 \overline{) 288} 1 \\
 \underline{-216} \\
 72 \overline{) 720} 10 \\
 \underline{-720} \\
 0
 \end{array}$$

$$\text{HCF} = 72$$

32. (a)
- $106 \times 106 - 94 \times 94 = 11236 - 8836 = 2400$

33. (b) Let the number =
- x

$$\text{Then, } x - \frac{2}{3} \text{ of } 70\% \text{ of } 600 = 320$$

$$\Rightarrow x - \frac{2}{3} \times \frac{70}{100} \times 600 = 320$$

$$\Rightarrow x - \frac{2}{3} \times 70 \times 6 = 320$$

$$\Rightarrow x - 2 \times 70 \times 2 = 320$$

$$\Rightarrow x - 280 = 320$$

$$\Rightarrow x = 280 + 320$$

$$\Rightarrow x = 600$$

Hence, the number of $x = 600$

34. (a) Given, selling price of a mobile phone
-
- = ₹ 1650

and Cost price = ₹ 1500

Profit = S.P. - C.P.

$$= 1650 - 1500 = ₹ 150$$

Now, the percentage of profit = $\frac{\text{Profit} \times 100}{\text{Cost price}}$

$$= \frac{150 \times 100}{1500} = \frac{150}{15} = 10\%$$

35. (c) In the first test, 18 marks out of 25

$$\therefore \text{Percentage} = \frac{18}{25} \times 100 = 72\%$$

And, in the second test, he got 22 marks of 25

$$\therefore \text{Percentage} = \frac{22}{25} \times 100 = 88\%$$

$$\therefore \text{In second test he get more mark} \\ = 88 - 72 = 16\%$$

36. (b) Average of 20 results is 18

$$\therefore \text{All results} = 20 \times 18 = 360$$

If 3 is subtracted from each result

We have 20 results. So, $20 \times 3 = 60$

Then, new results = $360 - 60 = 300$

$$\therefore \text{The new average} = \frac{300}{20} = 15$$

37. (b)
- $\frac{7}{3} \times \frac{2}{3} \div \frac{3}{5} = \frac{7}{3} \times \frac{2}{3} \times \frac{5}{3}$

$$2 + 1\frac{2}{3} \quad 2 + \frac{5}{3}$$

$$\begin{array}{r}
 \frac{70}{27} \\
 = \frac{27}{6+5} \\
 \frac{3}{3} \\
 = \frac{70}{27} \times \frac{3}{11} = \frac{70}{99}
 \end{array}$$

38. (a) If 90.0675 is divided by 15

$$\text{Then, } \frac{90.0675}{15} = 6.0045.$$

Hence, quotient = 6.0045

39. (d) 24 hours =
- 24×60
- min.
-
- =
- $24 \times 60 \times 60$
- sec.
-
- =
- 24×3600
- sec.
-
- = 86400 sec.

40. (a)
- $\sqrt{1089 \div 21} = \sqrt{\frac{1089}{121}} = \frac{33}{11} = 3$

41. (a) According to the question. The sum of all angles of a triangle is
- 180°
- .

$$\angle A + \angle B + \angle C = 180^\circ$$

$$\Rightarrow 3x + 5x + 8x + 4 = 180^\circ$$

$$\Rightarrow 16x + 4 = 180^\circ$$

$$\Rightarrow 16x = 180^\circ - 4^\circ = 176^\circ$$

$$\Rightarrow x = \frac{176^\circ}{16} = 11^\circ$$

Hence, all the three angles of the triangle are

$$\angle A = 3x = 33^\circ,$$

$$\angle B = 5x = 55^\circ,$$

$$\angle C = 8x + 4 = 92^\circ$$

i.e., $33^\circ, 55^\circ, 92^\circ$

42. (b) The prime factor of 37800

$$= 2 \times 2 \times 2 \times 3 \times 3 \times 3 \times 5 \times 5 \times 7$$

43. (a) According to the question, 10% of 3.75 + 15% of 7.25

$$= \frac{10}{100} \times 3.75 + \frac{15}{100} \times 7.25$$

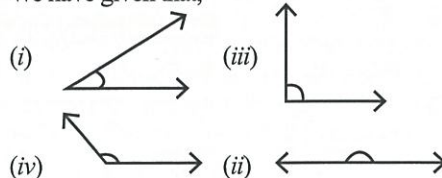
$$= \frac{1}{100} \times 3.75 + 0.15 \times 7.25$$

$$= 0.1 \times 3.75 + 1.0875$$

$$= 0.375 + 1.0875$$

$$= 1.4625$$

44. (a) We have given that,



45. (d) From option (d) $23 - 2 = 21$, $\frac{21}{7} = 3$
46. (b) 21.6°C = Thiruvananthapuram had the highest temperature at 3 AM.
47. (b) Srinagar is the coolest at 3 PM = 8.1°C .
48. (c) The temperature in Mumbai from that of Srinagar at 3 PM = $35.1^{\circ} - 8.1^{\circ}\text{C} = 27^{\circ}\text{C}$.
49. (b) The temperature at 3 AM need to rise 40°C in Thiruvananthapuram = $40^{\circ}\text{C} - 21.6^{\circ} = 18.4^{\circ}$.
50. (a) At 3 AM \rightarrow Chennai – Kolkata
 $= 21.1^{\circ}\text{C} - 13.1^{\circ}\text{C} = 8^{\circ}\text{C}$
 At 3 PM \rightarrow Chennai – Kolkata
 $= 29.9^{\circ}\text{C} - 26.5^{\circ}\text{C} = 3.4^{\circ}\text{C}$

GENERAL KNOWLEDGE

51. (a) Black soil is also known as regur soil. It is essentially found in the lava covered areas of Maharashtra, Karnataka etc. The word regur means to overflow. It is a mixture of sand, clay and organic materials. It is ideal for the growth of crops like cotton .it is made up of lava flows.
52. (a) Pusarla Venkata Sindhu is associated with Badminton . Pusarla Venkata Sindhu was born in Hyderabad to P. V. Ramana and P. Vijaya. Both her parents have been national level volleyball players.
53. (d) The Indian Space Research Organisation (ISRO) is the national space agency of India, situated in Bengaluru. ISRO built India's first satellite, Aryabhata, which was launched by the Soviet Union on 19 April 1975.
54. (a) Bhakra dam is constructed on Satluj river and located in Himachal Pradesh and Punjab border near Nangal city. It is around 226 m high and 518 m long, Bhakra dam is the second highest dam in India after the Tehri dam. It is also the highest straight gravity dam in the world.
55. (c) Vallabhbhai Jhaverbhai Patel was an Indian barrister, and a senior leader of the Indian National Congress who played a leading role in the country's struggle for independence and guided its integration into a united, independent nation.
56. (d) The Godavari is the longest river in south India . Its source is in Triambakeshwar, Maharashtra. It flows east for 1,465 kilometres, draining the states of Maharashtra (48.6%), Telangana (18.8%), Andhra Pradesh (4.5%), Chhattisgarh (10.9%) and Odisha (5.7%).
57. (b) Venus is called the Morning Star and the Evening Star. Venus shines so brightly that it is the first "star" to appear in the sky after the Sun sets, or the last to disappear before the Sun rises.
58. (d) According to Article 14 - the State shall not deny to any person equality before the law or the equal protection of the laws within the territory of India, prohibition of discrimination on grounds of religion, race, caste, sex or place of birth.
59. (c) Narora Atomic Power Station (NAPS) is a nuclear power plant located in Narora, Bulandshahar District in Uttar Pradesh.
60. (b) Cholera spreads through contaminated food and water, Cholera is an acute diarrhoeal infection caused by ingestion of food or water contaminated with the bacterium *Vibrio cholerae*.
61. (c) The Sahara is a desert on the African continent. It occupies an area of 9,200,000 square kilometers. It is the largest hot desert in the world and the third largest desert overall, smaller only than the deserts of Antarctica and the Arctic.
62. (a) Manas National Park is a national park, UNESCO Natural World Heritage site, a Project Tiger reserve, an elephant reserve and a biosphere reserve in Assam. It is located in the Himalayan foothills. The park is known for the Assam roofed turtle, hispid hare, golden langur and pygmy hog.
63. (c) Plants growing from roots-carrot, radish
 Plants growing from stems-potato, ginger, sweet potato.
64. (b) The Western Ghats is also known as Sahyadri . It is a mountain range that covers an area of 140,000 square kilometres in a stretch of 1,600 kilometres parallel to the western coast of the Indian peninsula, traversing the states of Tamil Nadu, Kerala, Karnataka, Goa, Maharashtra .
65. (b) Helium is used for filling weather balloons because it is lighter than air as its density is about one-eighth to that of air, therefore can go upward in air for weather forecasting and it is inert and non-inflammable.
66. (c) Children need relatively more protein than adults because of the protein requirement for growth.

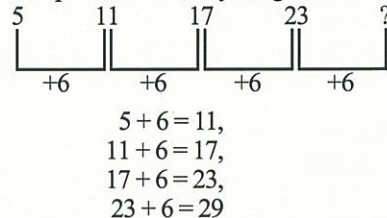
67. (b) Soft drink beverage bottle is sealed with cap, it is pressurized by a mixture of air and carbon dioxide (CO_2). Due to high partial pressure of carbon dioxide, the amount of dissolved CO_2 is very high in soft drinks. After removal of cap, excess CO_2 escapes and produces effervescence.
68. (c) The lowest rank is flying officer.
RANKS: Group Captain–Wing Commander–Squadron Leader Flight Lieutenant–Flying Officer
69. (b) Religious festivals–Baisakhi, Pongal, Chhat Puja
National festivals–Republic Day, Independence Day
70. (a) Amartya Sen is an Indian economist who since 1972 has taught and worked in the United Kingdom and the United States. He was awarded the Nobel Prize in Economics in 1998.
71. (b) Equator is an imaginary line drawn half way between North Pole and South Pole.
72. (c) Greenland is the world's largest island, located between the Arctic and Atlantic oceans, east of the Canadian Arctic Archipelago. It is an autonomous territory within the Kingdom of Denmark.
73. (b) Antarctica is the coldest place in world, lying in the South Frigid Zone. The climate of Antarctica is the coldest on Earth. The continent is also extremely dry. Snow rarely melts on most parts of the continent.
74. (a) Alexander Graham Bell is best known for his invention of the telephone in 1876. His interest in sound technology was deep-rooted and personal, as both his wife and mother were deaf.
75. (a) Ghoomar is a traditional folk dance of Rajasthan. The dance is chiefly performed by veiled women who wear flowing dresses called Ghaghara.

LANGUAGE

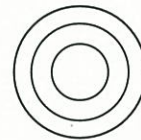
76. (a) 77. (b) 78. (a) 79. (b) 80. (a)
81. (d) 82. (d) 83. (c) 84. (b) 85. (b)
86. (a) 87. (d) 88. (a) 89. (b) 90. (b)
91. (b) 92. (a) 93. (c) 94. (a) 95. (a)
96. (b) 97. (d) 98. (b) 99. (a) 100. (b)

INTELLIGENCE TEST

101. (a) CATTLE : HERD :: SHEEP : ?
As, group of CATTLE is related to HERO.
So, group of SHEEP is related to FLOCK.
102. (c) $07 : 56 :: 09 : ?$
As, $07 \times 8 = 56$
Similarly, $09 \times 8 = 72$
103. (b) The pattern follows by the given series.

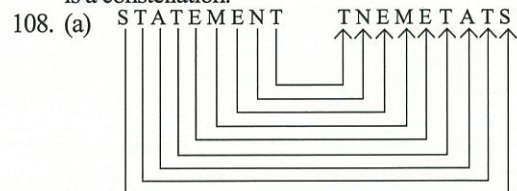


104. (d) 105. (b)
106. (d) Haryana is a state of India and India is a country of world.

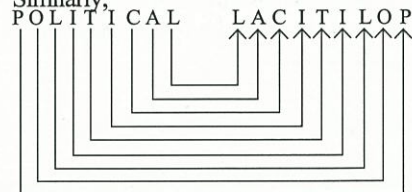


So, diagram indicate the best relation.

107. (d) All expect Orion are Zodiac signs while Orion is a constellation.

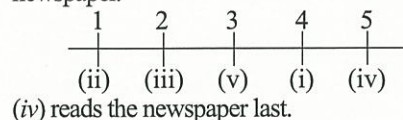


Similarly,



The letters of the word are written backward.

109. (d)
110. (d) On replacing the sign.
 $15 \div 5 \times 2 + 3 = 15 \div 5 \times 2 + 3$
 $= 3 \times 2 + 3 = 6 + 3 = 9$
111. (d) Five men (i), (ii), (iii), (iv) and (v) read a newspaper.



112. (c) According to the question,

$$12 : 168 :: 16 : ?$$

$$\text{As, } 12 \times 14 = 168$$

$$\text{So, } 16 \times 14 = 224$$

113. (d)

114. (b) Code DEAF is written as 3587

and FILE is written as 7465

On decoding the given code.

 \therefore IDEAL will be written as 43586

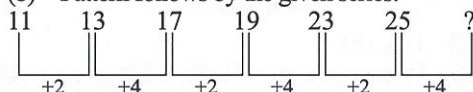
As, I = 4, D = 3, E = 5, A = 8, L = 6

115. (a)

116. (a) We arrange the given words in alphabetical order.

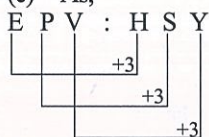
RANDOM \leftarrow RESTAURANT \leftarrow RESTRICT \leftarrow ROBBER

117. (b) Pattern follows by the given series:

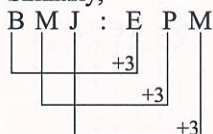


$$? = 25 + 4 = 29$$

118. (c) As,



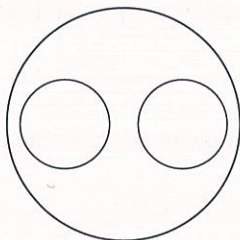
Similarly,



The word is coded by moving the letters two steps forward.

119. (a) As, Lotus and Rose are flower.

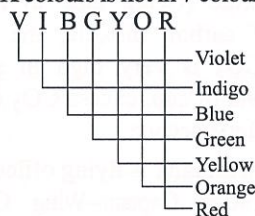
So, the diagram indicate the best relation between Flower, Lotus and Rose



120. (d)
- $07 : 49 :: 11 : ?$

Here, $(07)^2 = 49$, Similarly, $(11)^2 = 121$

121. (b) PINK colours is not in 7 colour of VIBGYOR.



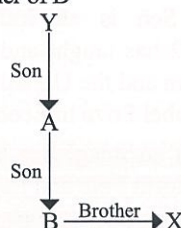
122. (c) According to the question,

A is the son of Y,

B is the son of Y's son,

B is the grandson of Y

X is the brother of B



Here, X is grandson of Y.

123. (d) Area of rectangle =
- 48 m^2
- ,
- $l = 6 \text{ m}$

$$\Rightarrow l \times b = 48 \text{ m}^2 \Rightarrow 6 \times b = 48$$

$$\Rightarrow b = \frac{48}{6} = 8 \text{ m} \Rightarrow b = 8 \text{ m}$$

 \therefore Breadth = 8 m

124. (b) We have given that,

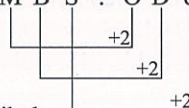
Regular intervals = 45 minutes

The next bell be rung at 7 : 45 AM

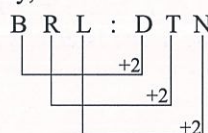
The last bell was rung 5 minutes ago

 \therefore Present time = 7 : 05 AM

125. (a) As, M B S : O D U



Similarly,



The coded letters are moved two steps forward.

Sainik School Entrance Exam Solved Paper-2019

(Class-VI)

MATHEMATICS

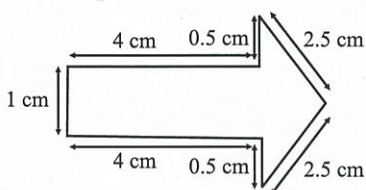
1. A student multiplied 7236 by 65 instead of multiplying by 56. By how much was his answer greater than the correct answer?

(a) 87555 (b) 65124
(c) 72360 (d) 65000

2. Simplify : $1 + \left\{ \frac{1}{2} + \frac{1}{3} + \frac{1}{6} + \left(\frac{3}{4} - \frac{1}{3} \right) \right\}$

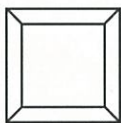
(a) $\frac{30}{37}$ (b) $\frac{37}{30}$ (c) $\frac{15}{37}$ (d) $\frac{15}{30}$

3. Find the perimeter of the following figure



(a) 15 cm (b) 15 cm²
(c) 16 cm (d) 25 cm²

4. A floor is 5 m long and 4 m wide. A square carpet of side 3 m is laid on the floor. Find the area of the floor that is not carpeted.



(a) 21 m² (b) 29 m²
(c) 11 m² (d) 21 cm²

5. Find out the smallest number which is divisible by 6, 12, 18

(a) 360 (b) 180 (c) 120 (d) 60

6. Which of the following measures of angles given can be those of a isosceles triangle?

(a) 90, 45 (b) 60, 30
(c) 120, 40 (d) 90, 50

7. The length of a rectangle is 5 cm more than its breadth. If the perimeter of the rectangle is 50 cm then what is the area?

(a) 150 cm² (b) 250 cm²
(c) 900 cm² (d) 800 cm²

8. 12 persons can finish a piece of work in 15 days. In how many days will the same work be completed by 20 persons?

(a) 15 days (b) 9 days
(c) 30 days (d) 20 days

9. The LCM of two prime numbers is

(a) difference (b) product
(c) sum (d) none of the above

10. In a School of 1000 students, 330 come by bus, 400 come walking and the remaining are dropped by parents. What is the percentage of students that do not ride the bus to school?

(a) 67% (b) 27% (c) 50% (d) 33%

11. A train from Station A to Station B covers a distance of 616 km at a uniform speed of 112 km/hr. It Halts at Station. B for 1 hour before starting back. How much time will it take to complete the journey and reach back to Station A (i.e. from A to B and back)?

(a) 11 hours
(b) 12 hours 45 minutes
(c) 12 hours
(d) 5 hours 30 minutes

12. A table was sold at 16% loss for ₹ 3360. Find the cost price of the table

(a) ₹ 4000 (b) ₹ 3392
(c) ₹ 3600 (d) ₹ 4296

13. There are 17 rooms in a school, every room has two fans and four LED bulbs. How many switches are required for the school if every fan requires a switch and one switch is required for every two bulbs?

(a) 34 (b) 68 (c) 102 (d) 17

14. The product of two decimal numbers is 12.194. If one of them is 4.69, what the other number is?

(a) 7.6 (b) 2.6 (c) 9.8 (d) 4.8

15. Rahul purchases a chair for ₹ 600 and uses ₹ 200 for repairs. If he sells it for ₹ 1000 then he has

(a) no profit no loss
(b) 25% loss
(c) 25% profit
(d) cannot be calculated

16. The temperature dropped 15 degree celsius in the last 30 days. If the rate of temperature drop remains the same, how many degrees will the temperature drop in the next ten days?
(a) 10 degrees (b) 5 degrees
(c) 20 degrees (d) 15 degrees
17. From a basket of mangoes when counted in twos there was one extra, counted in threes there were two extra, counted in fours there were three extra, counted in fives there were four extra. But counted in sevens there were no extra. At least how many mangoes were there in the basket?
(a) 119 (b) 110
(c) 111 (d) 126
18. Which of the following two digit number when added to 27 gets reversed?
(a) 27 (b) 24
(c) 47 (d) 70
19. The ratio of income to expenditure of Radha is 7 : 5. If she saves ₹ 2000 a month, what is her annual income?
(a) ₹ 144000 (b) ₹ 60000
(c) ₹ 95000 (d) ₹ 84000
20. The ratio of the length to breadth of a rectangular lawn is 3 : 5. It costs ₹ 3200 to fence it at the rate of ₹ 2 a meter. What would be the cost of developing the lawn at the rate of ₹ 10 per square meter?
(a) ₹ 18,00,000 (b) ₹ 15,00,000
(c) ₹ 19,00,000 (d) ₹ 21,00,000
21. A, B and C divide an amount amongst themselves in the ratio of 4 : 7 : 9 respectively. If B's share in the amount is ₹ 2989, what is the total amount?
(a) ₹ 9820 (b) ₹ 8540
(c) ₹ 2720 (d) ₹ 8640
22. The average age of a class of 40 students is 18 years. When the teacher age is also included to calculate the average age becomes 19 years. What is the teacher's age?
(a) 59 years (b) 69 years
(c) 49 years (d) 39 years
23. What is the greatest number which when divides 3026 and 5053 leaves remainders 11 and 13 respectively?
(a) 15 (b) 30 (c) 45 (d) 60
24. Ravi purchased a chair at ₹ 500 and sold it at ₹ 550. What was his gain or loss percent?
(a) 10% (b) 20%
(c) 30% (d) 40%
25. A certain distance is being covered in 28 hours by walking with a speed of 5 km/h. If the speed is increased by 2 km/h then in how much time the same distance will be covered?
(a) 30 hours (b) 15 hours
(c) 20 hours (d) 25 hours
26. A piece of wire $\frac{7}{8}$ meter long broke into two pieces. One piece was $\frac{1}{4}$ meter long. How long is the other piece?
(a) $\frac{4}{8}$ m (b) $\frac{5}{8}$ m (c) $\frac{6}{8}$ m (d) $\frac{7}{8}$ m
27. What is the missing number in the sequence 2, 5, 10, 14, 18, 23, 26, 32 ?
(a) 33 (b) 34 (c) 36 (d) 37
28. 30 men can do a piece of work in 16 days. In how many days 8 men can do the same work?
(a) 30 days (b) 40 days
(c) 50 days (d) 60 days
29. Ram, Shyam and Mohan runs at speed of 75, 50 and 30 m/minute respectively. After how much time will they meet together for the first time running with the same speed?
(a) 5 hours (b) 2 hours
(c) 3 hours (d) $\frac{5}{2}$ hours
30. Represent 26 kg 5 gram using concept of decimals.
(a) 26.05 kg (b) 26.005 kg
(c) 26.5 kg (d) 26.0005 kg
31. At what rate, a sum of ₹ 6000 will amounts to ₹ 7800 in 5 years?
(a) 3% (b) 4% (c) 5% (d) 6%
32. What will be the depth of a cubical pond whose volume is 729 m³?
(a) 9 m (b) 6 m (c) 8 m (d) 5 m
33. Evaluate :
 $3 \times 7 + 4 - 6 \div 3 - 7 + 45 \div 5 \times 4 + 49$
(a) 101 (b) 103 (c) 99 (d) 35
34. In what time a train whose length is 100 m moving with a speed of 60 km/h crosses a platform whose length is 150 m?
(a) 15s (b) 14s (c) 18s (d) 20s
35. Ashu takes 12 days to complete the work. Pranav takes 10 days to complete the same work. Ashu, Pranav and Ramu take 5 days to complete the same work. How many days will Ramu take to complete the same work?
(a) 70 days (b) 90 days
(c) 60 days (d) 50 days

36. The LCM of two numbers is 28 times of their HCF. The sum of their LCM and HCF is 1740. If one number is 240 then what is the other number?
(a) 420 (b) 460 (c) 500 (d) 380
37. Four clocks rings at the time interval of 6s, 8s, 12s and 18s respectively. If they ring together at 12 am then how many times will they ring together within the time span of 6 minutes?
(a) 6 times (b) 4 times
(c) 7 times (d) 5 times
38. What is the least multiple of 23 which when divided by 18, 21 and 24 leaves remainders 7, 10 and 13 respectively?
(a) 1240 (b) 3013 (c) 2364 (d) 7628
39. A milkman has two cans of milk containing 75 litres and 45 litres of milk respectively. What will be the measure of largest vessel that can measure the milk of the two cans exactly?
(a) 12 litres (b) 18 litres
(c) 15 litres (d) 10 litres
40. A table was purchased at ₹ 1000 and was sold at ₹ 800. What was gain or loss% in this transaction
(a) 5% (b) 10% (c) 20% (d) 30%
41. The average weight of 6 boys gets increased by 5 kg if a boy with weight 20 kg is replaced by a new boy. What is the weight of new boy?
(a) 41 kg (b) 50 kg (c) 65 kg (d) 49 kg
42. A man covers a distance of 40 km. He covers first 10 km at 10 km/h, second 10 km at 20 km/h, third 10 km at 30 km/h and last 10 km at 40 km/h. What is the average speed of man?
(a) 18.2 km/h (b) 19.2 km/h
(c) 19.0 km/h (d) 16.2 km/h
43. If area of rectangular garden of 5 m breadth is 300 sq. m., then what will be the length of garden?
(a) 60 m (b) 70 m (c) 80 m (d) 90 m
44. If the square of a number is added to the square of 28 the result is 1808. What is the number?
(a) 66 (b) 50 (c) 32 (d) 16
45. Cost of a dozen pens is ₹ 180 and cost of 8 ball pens is ₹ 56. The ratio of the cost of a pen to the cost of a ball pen is
(a) 15 : 7 (b) 180 : 56
(c) 1 : 1 (d) 8 : 15
46. A truck requires 108 litres of diesel for covering a distance of 594 km. How much diesel will be required by the truck to cover a distance of 1650 km?
(a) 3000 litres (b) 108 litres
(c) 300 litres (d) 165 litres
47. Find the simple interest on ₹ 5000 at the rate of $7\frac{1}{2}\%$ for a period of 3 years
(a) ₹ 5000 (b) ₹ 6125
(c) ₹ 2000 (d) ₹ 1125
48. The angles of a triangle are in the ratio of 1 : 2 : 3. Find the values of the angles
(a) 30, 60, 90 (b) 15, 45, 120
(c) 60, 60, 60 (d) 45, 45, 90
49. One number exceeds another number by 36. The sum of numbers is 48 then the numbers are
(a) 40, 08 (b) 36, 12
(c) 42, 06 (d) 32, 16
50. At which one of the following times is the angle between the hands of a clock exactly one straight angle?
(a) 12 AM (b) 12 PM
(c) 9.15 AM (d) 6 AM

GENERAL KNOWLEDGE

51. Out of the following list of Param Vir Chakra (PVC) Awardees who was awarded with PVC during Kargil War?
(a) Lt Col Ardeshir Burzorji Tarapore
(b) 2/Lt Arun Khetarpal
(c) Capt Vikram Batra
(d) Maj Somnath Sharma
52. Which state among the following has adopted Sanskrit as its one of the official language?
(a) Himachal Pradesh (b) Uttarakhand
(c) Rajasthan (d) Uttar Pradesh
53. Who is the current Vice-President of India?
(a) Shri Narendra Modi
(b) Shri Venkaiah Naidu
(c) Shri Arun Jaitley
(d) Shri Ram Nath Kovind
54. A medical practitioner specializing in children and their diseases
(a) Geologist (b) Paediatrician
(c) Cardiologist (d) Neurologist
55. A group of stars is called a
(a) Solar system (b) Constellations
(c) Planets (d) Comets
56. Which gas when solidified is commonly known as Dry ice
(a) Carbon monoxide (b) Nitrous oxide
(c) Carbon dioxide (d) Hydrogen peroxide

57. The members of the Rajya Sabha can have a maximum tenure of how long?
 (a) Five years (b) Six years
 (c) Seven years (d) Two years
58. P Gopichand is associated with which Sport?
 (a) Badminton (b) Cricket
 (c) Football (d) Hockey
59. Which of the following company does not sell mobiles?
 (a) Apple (b) BSNL
 (c) HP (d) Sony
60. A vehicle capable of travelling over land and water is called
 (a) Hovercraft (b) Rovercraft
 (c) Mowercraft (d) Car
61. The space programme of Government of India is looked after
 (a) ISBT (b) NTRO
 (c) NABARD (d) ISRO
62. The Motto of the Indian Navy is
 (a) Sarvatra Sarvottam Suraksha
 (b) Sham No Varunah
 (c) Valour and Wisdom
 (d) Nabhah Sparsham Deeptam
63. Which is the largest gland in human body?
 (a) salivary gland (b) lungs
 (c) liver (d) stomach
64. Who has written 'Sare Jahan Se Achha'?
 (a) Rabindra Nath Tagore
 (b) Bankim Chandra Chatterjee
 (c) Muhammad Iqbal
 (d) Subash Chandra Bose
65. Which is the deepest ocean?
 (a) Indian Ocean (b) Arctic Ocean
 (c) Antarctic Ocean (d) Pacific Ocean
66. Who fixes the salaries and the allowances of the Speaker of Lok Sabha?
 (a) Council of Ministers
 (b) President
 (c) Parliament
 (d) Judge of Supreme Court
67. Which article of constitution provides Indian citizen 'Right to Equality'?
 (a) Article 12 (b) Article 13
 (c) Article 17 (d) Article 14
68. 1024 Kilobytes is equal to :
 (a) 8 Bits (b) 1 Megabyte (MB)
 (c) 1 Gigabyte (GB) (d) 1 Byte
69. Hirakund dam is built on the river:
 (a) Cauvery (b) Mahanadi
 (c) Krishna (d) Sutlej
70. Deficiency of Iodine causes:
 (a) Goite (b) Malaria
 (c) Cataract (d) Scurvy
71. Who is known as 'Iron man' of India?
 (a) Jawaharlal Nehru
 (b) Mahatma Gandhi
 (c) Sardar Patel
 (d) Subhas Chandra Bose
72. Which among of the following is not an Indian Sport?
 (a) Kabbadi (b) Kho-Kho
 (c) Hockey (d) Rugby
73. Those who study things that were made and used in the past these people are called
 (a) Biologist (b) Archaeologist
 (c) Geologist (d) Doctor
74. What is the ratio of width to the length of National Flag of India?
 (a) 4 : 5 (b) 2 : 3
 (c) 1 : 1 (d) 5 : 6
75. Where is Wagah-Boder located?
 (a) Longewala, Rajasthan
 (b) Morh, Manipur
 (c) Rann of Kutch, Gujarat
 (d) Amritsar, Punjab

LANGUAGE

Choose the most appropriate option given against each question.

76. Which word means nearly the same as "scream"?
 (a) find (b) stop
 (c) sell (d) shout
77. Which word means nearly the same as "happy"?
 (a) conditions (b) disgusted
 (c) content (d) ambitious

Choose the appropriate option to complete the sentences.

78. The men are working. Their are at home.
 (a) wife (b) husbands
 (c) husband (d) wives
79. Rahul works less than Mohan.
 (a) carefully (b) more careful
 (c) careful (d) careful as
80. It all day long yesterday.
 (a) was rained (b) raining
 (c) rained (d) has rained

Rearrange the following words/ groups of words to make meaningful sentences. Choose the correct sequence given in the options.

81. (A) quite happy / (B) i was / (C) the first prize / (D) to receive.
 (a) BADC (b) ABCD
 (c) DCBA (d) BACD
82. (A) protect / (B) we must / (C) natural resources / (D) our.
 (a) ABCD (b) BADC
 (c) ACDB (d) DCAB

Choose the appropriate option to fill in the blanks:

83. One who leads an austere life
 (a) Ruler (b) Auditor
 (c) Ascetic (d) Carpenter
84. A person who presents a radio/ television programme.
 (a) Director (b) Actress
 (c) Actor (d) Anchor
85. Pick the opposite gender of 'Lad'
 (a) Lass (b) Queen
 (c) Woman (d) Dame
86. Choose the opposite gender of 'Fox'
 (a) Filly (b) Goose
 (c) Witch (d) Vixen

Do as directed:

87. always stood third in her class (supply the correct pronoun)
 (a) You (b) They
 (c) He (d) She
88. All the candidates should bring own pen (supply the correct pronoun)
 (a) Everyone (b) They
 (c) Nobody (d) Their
89. Experience is the teacher (supply the correct adjective)
 (a) Better (b) Good
 (c) Best (d) Great
90. a beautiful scene it is ! (pick up the correct adverb)
 (a) What (b) How
 (c) Always (d) Never
91. Did you apply this post? (Supply the correct preposition)
 (a) To (b) At
 (c) For (d) Of
92. You should take care your health (supply the correct preposition)
 (a) Of (b) In
 (c) At (d) To
93. He is rich he is not happy (supply the correct conjunction)

- (a) Yet (b) Though
 (c) Because (d) But





94. Work hard you will fail (supply the correct conjunction)
 (a) Or (b) Still
 (c) Because (d) Either
95. The child for two hours (select the correct form of verb)
 (a) Has been sleeping
 (b) Have been sleeping
 (c) Has slept
 (d) Will sleep

Directions (Qs. No. 96 to 100) : Read the following passage and answer the questions :

From far out in space, Earth looks like a blue ball. Since water covers three-fourths of the Earth's surface, blue is the colour we see most. The continents look brown, like small islands floating in the huge, blue sea. White clouds wrap around the Earth like a light blanket. The Earth is shaped like a sphere, or a ball. It is 25,000 miles around! It would take more than a year to walk around the whole planet. A spaceship can fly around the widest part of the sphere in only 90 minutes.

Even though spaceships have travelled to the Moon, people cannot visit the Moon without special suits. The Moon has no air or water. Plants and animals can't live there either. Astronauts first landed on the Moon in 1969. After that, there were six more trips to the Moon. They brought back Moon rocks, which scientists are still studying. There are holes, or craters, all over the Moon's surface. Scientists believe that meteorites smashed into the Moon millions of years ago and formed the craters.

The Sun is the closest star to Earth. A star is a hot ball of burning gas. The Sun looks very big because it is so close. But the Sun is just a medium-sized star. Billions of far-away stars are much bigger than our Sun. The burning gases from the Sun are so hot that they warm the Earth from 93 million miles away! Even though the Sun is always glowing, the night here on Earth is dark. That's because the Earth rotates, or turns around, every 24 hours. During the day, the Earth faces the Sun. Then we see light. During the night, the Earth turns away from the Sun. Then it faces the darkness of space. Each day we learn more about the Earth, the Moon, and the Sun.

96. Why is blue the colour we see most when looking at Earth from outer space?
 (a) Because most of the Earth is covered in land.
 (b) Because the Sun's rays make the Earth look blue.
 (c) Because most of the Earth is covered in water.
 (d) Because clouds wrap around the Earth.
97. What does 'formed' mean?
 (a) hit (b) made
 (c) broke (d) stopped
98. What causes daylight on Earth?
 (a) The full Moon causes daylight.
 (b) Daylight is caused by the Earth facing away from the Sun.
 (c) The heat of the Sun's rays causes daylight.
 (d) Daylight is caused by the Earth facing toward the Sun.
99. Which of the following sentences BEST describes the Sun?
 (a) The Sun looks small because it is so far from Earth.
 (b) The Sun is a ball of burning gases that gives the Earth heat and light.
 (c) The Sun is a small star.
 (d) The Sun is not as hot as it looks.
100. Why did the astronauts bring rocks back from the Moon?
 (a) Because they didn't know if they would return to the Moon ever again.
 (b) Because they wanted to prove that they went to the Moon.
 (c) Because they wanted to remember how the Moon looked.
 (d) Because they wanted to study them and learn more about the Moon.
103. Which of the following diagram indicates the best relation between Travellers, Train and Bus?
 (a)  (b) 
 (c)  (d) 
104. If CAR is to PETROL then TELEVISION to
 (a) ANTENNA
 (b) TRANSMISSION
 (c) ENTERTAINMENT
 (d) ELECTRICITY
105. Which figure among the four figures (a), (b), (c) and (d) would replace the question mark in figure 'X'?



X



(a)

(b)

(c)

(d)

106. A class of boys stands in a single line. One boy is nineteenth in order from both the ends. How many boys are there in the class?
 (a) 27 (b) 37 (c) 38 (d) 39
107. If you fold the transparent paper along the dotted line Figure 'X' which alternative figure from (a), (b), (c) and (d) would you get?



X



(a)



(b)







(c)



(d)

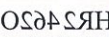
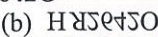


108. If SCHOOL is to EDUCATION then BANK is to?
 (a) ATM (b) CHEQUE
 (c) LOAN (d) LOCKER
109. If the given word is seen in mirror, which alternative would resemble its mirror image?

SHARE

- (a)  (b) 
 (c)  (d) 

110. Choose the alternative that resembles the water image of the given alpha-numeric series below:

HR26420

- (a)  (b) 
 (c)  (d) 

INTELLIGENCE TEST

101. If you see the problem figure in the mirror, which figure out of the four figures (a), (b), (c) and (d) will be the mirror image of figure 'X'.



X



(a)



(b)



(c)



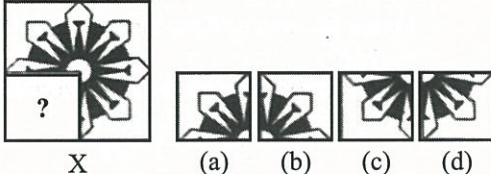
(d)

102. Choose the word which is least like the other words in the group.
 (a) PICTURE (b) POSTER
 (c) BOOK (d) SCENERY

111. Choose the word which is least like the other words in the group.

(a) EARTH (b) SUN
(c) MERCURY (d) JUPITER

112. Which figure among the four alternatives (a), (b), (c) and (d) would replace the question mark in figure X?



113. If all directions are rotated clockwise by 90° angle i.e., North is changed to West, East to North and to on, then what will come in place of North West?

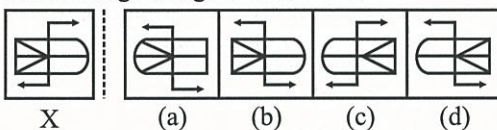
(a) South-West (b) North-East
(c) South-East (d) East-West

114. Choose the word which can be formed from the given word :

INFRASTRUCTURE

(a) RUPTURE (b) SCULPTURE
(c) FRACTURE (d) VULTURE

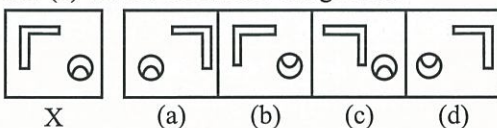
115. If you see the problem figure in the mirror along the dotted line, which figure out of the four figures (a), (b), (c) and (d) will be the mirror image of figure 'X'.



116. Choose the word which is least like the other words in the group

(a) STUDENT (b) LAWYER
(c) MECHANIC (d) ENGINEER

117. If you see the problem figure 'X' in the mirror, which figure out of the four figures (a), (b), (c) and (d) will be the mirror image of it.

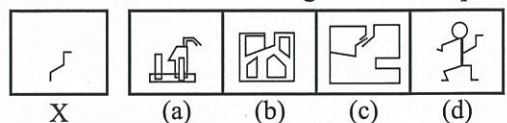


118. If '+' means '÷', '÷' means '-', '-' means '×' and '×' means '+', then what would be the answer of the equation?

$$12 + 6 \div 3 - 2 \times 8 = ?$$

(a) -2 (b) 2 (c) 4 (d) 8

119. Figure 'X' is embedded in any one of the four alternative figures (a), (b), (c) and (d). Find the alternative which contains figure 'X' as its part.



120. If '÷' means '×', '×' means '+', '+' means '-' and '-' means '÷', then what would be the answer of the equation?

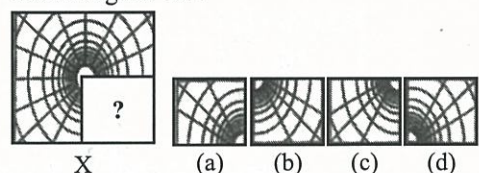
$$16 \times 3 + 5 - 2 \div 4 = ?$$

(a) 9 (b) 10
(c) 19 (d) None of these

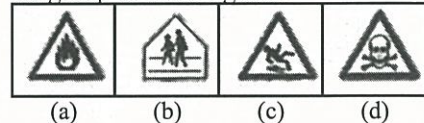
121. Nitin ranks eighteenth from the top in a class of 49 students. What is his rank from the last?

(a) 18 (b) 19 (c) 31 (d) 32

122. Which figure among the four alternatives (a), (b), (c) and (d) would replace the question mark in figure 'X'?



123. Find out the figure which does not belong to the group of other figures.



124. Find the missing number in the number series given below :

$$06, 11, 21, 36, 56, \dots?$$

(a) 42 (b) 51 (c) 81 (d) 91

125. Find the missing number that has same relation to 26 as 37 has to 19.

$$19 : 37 :: 26 : ?$$

(a) 52 (b) 51 (c) 46 (d) 43

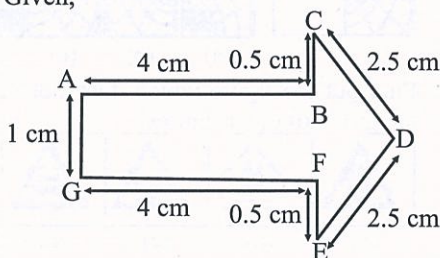
Solutions

MATHEMATICS

1. (b) On solving the given multiplication we get,
 $= 7236 \times 65 - 7236 \times 56$
 $= 7236 (65 - 56)$
 $= 7236 \times 9 = 65124$
 Hence, his answer was 65124 greater than the correct answer.

2. (a) $1 \div \left\{ \frac{1}{2} + \frac{1}{3} + \frac{1}{6} \div \left(\frac{3}{4} - \frac{1}{3} \right) \right\}$
 According to BODMAS rule we get,
 $= 1 \div \left\{ \frac{1}{2} + \frac{1}{3} + \frac{1}{6} \div \frac{5}{12} \right\}$
 $= 1 \div \left\{ \frac{1}{2} + \frac{1}{3} + \frac{1}{3} \times \frac{12}{5} \right\}$
 $= 1 \div \left\{ \frac{1}{2} + \frac{1}{3} + \frac{2}{5} \right\}$
 $= 1 \div \left\{ \frac{15+10+12}{30} \right\} = 1 \div \left\{ \frac{37}{30} \right\} = \frac{30}{37}$

3. (a) Given,



The perimeter of the figure
 $= AB + BC + CD + DE + EF + FG + GA$
 $= 4 + 0.5 + 2.5 + 2.5 + 0.5 + 4 + 1 = 15 \text{ cm.}$

4. (c)

The area of the floor which is not carpeted
 $= \text{Area of Rectangle } ABCD$

Area of square PQRS

$$= l \times b - a^2$$

$$= 5 \times 4 - (3)^2$$

$$= 20 - 9 = 11 \text{ m}^2.$$

Hence the area of floor that is not carpeted
 $= 11 \text{ m}^2.$

5. (b) Required smallest no. which is divisible by,
 6, 12, 18 = LCM (6, 12, 18)
 $= 2 \times 2 \times 3 \times 3 = 36.$

The answer must be multiple of 36. and we have given in the option 180, which is the smallest number.

6. (a) We know that,
 In Isosceles Triangle, two angles are same.
 Check the option.

- (a) 90, 45, i.e.,
 $\angle A = 90^\circ, \angle B = 45^\circ$

$$\angle C = 180 - (90 + 45) = 180 - 135 = 45^\circ$$

So, $\angle B = \angle C$

Hence, option (a) is the correct answer.

7. (a) Let the breadth of the rectangle = x
 As we have given length of a rectangle is 5 cm more than its breadth.

So, the length of the rectangle (l) = $x + 5$

Perimeter of the rectangle = 50 cm

$$2(l + b) = 50$$

$$l + b = 25$$

$$x + x + 5 = 25$$

$$2x + 5 = 25$$

$$2x = 20$$

$$x = 10$$

\therefore Breadth (b) = 10 cm

Length (l) = $10 + 5 = 15 \text{ cm}$

\therefore Area = $l \times b$

Hence, the area = $10 \times 15 = 150 \text{ cm}^2.$

8. (b) $\therefore W_1 = W_2$

Work done = Man \times Day

$$\therefore M_1 \times D_1 = M_2 \times D_2$$

$$12 \times 15 = 20 \times D_2$$

$$D_2 = \frac{12 \times 15}{20} = 9 \text{ days}$$

Hence the day will be same work be completed by 20 persons.

Hence option (b) is the correct answer.

9. (b)

10. (a) No. of students who do not ride the bus
-
- $= 1000 - 330 = 670$

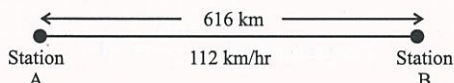
 \therefore Required percentage

No. of students who

$$= \frac{\text{do not ride the bus}}{\text{Total students}} \times 100$$

$$= \frac{670}{1000} \times 100 = 67\%$$

11. (c)



Total time will take to complete the journey

$$= \frac{\text{Distance AB}}{\text{Speed}} + 1 \text{ hr} + \frac{\text{Distance BA}}{\text{Speed}}$$

$$= \frac{616}{112} + 1 + \frac{616}{112} \left[\because \text{Time} = \frac{\text{Distance}}{\text{Speed}} \right]$$

$$= 5.5 \text{ hr} + 1 \text{ hr} + 5.5 \text{ hr}$$

$$= 12 \text{ hr.}$$

12. (a)

$$\therefore \% \text{ Loss} = \frac{\text{CP} - \text{SP}}{\text{CP}} \times 100$$

$$16 = \frac{\text{CP} - 3360}{\text{CP}} \times 100$$

$$16 \text{ CP} = 100 \text{ CP} - 336000$$

$$84 \text{ CP} = 336000$$

$$\text{Hence CP of table} = \frac{336000}{84} = ₹4000.$$

13. (b) Given,

17 rooms = has two fan = four LED bulb

According to the question,

One switch for every fan = 1 switch

One switch for every two bulb,

i.e. we have four LED bulb

We need = 2 switches

According to the question,

Switch for Fan = $17 \times 4 = 68$ switches.14. (b) One no. \times Other no. = Product of no.'s

$$4.69 \times \text{Other no.} = 12.194$$

$$\text{Other no.} = \frac{12.194 \times 100}{469 \times 1000} = \frac{12194}{4690} = 2.6.$$

15. (c) Total cost price of the chair

$$= ₹ 600 + ₹ 200 = ₹ 800$$

$$\text{Selling price of the chair} = ₹ 1000$$

As we can see here,

$$\text{SP} > \text{CP} \rightarrow \text{Profit}$$

$$\text{Required profit \%} = \frac{\text{SP} - \text{CP}}{\text{CP}} \times 100$$

$$= \frac{1000 - 800}{800} \times 100 = \frac{200 \times 100}{800}$$

$$= 25\% \text{ profit}$$

16. (b) Temperature dropped in 30 days = 15°C

Temperature dropped in 1 day

$$= \frac{15}{30} = \frac{1}{2}^\circ\text{C/day}$$

Temperature drop in the next 10 days

$$= \frac{1}{2} \times 10 = 5^\circ\text{C.}$$

17. (a) No. of mangoes in the basket 1

Which gives remainder 1 when divided by 2

Which gives remainder 2 when divided by 3

Which gives remainder 3 when divided by 4

Which gives remainder 4 when divided by 5

Which gives remainder 5 when divided by 6

Which gives remainder 0 when divided by 7

Now we have to check from the option.

$$\begin{array}{r} \text{(a) } 2 \overline{) 119} \quad (59) \qquad 3 \overline{) 119} \quad (39) \\ \underline{10} \qquad \qquad \underline{9} \\ 19 \qquad \qquad 29 \\ \underline{18} \qquad \qquad \underline{27} \\ 1 \qquad \qquad 2 \end{array}$$

$$\begin{array}{r} 4 \overline{) 119} \quad (29) \qquad 5 \overline{) 119} \quad (23) \\ \underline{8} \qquad \qquad \underline{10} \\ 39 \qquad \qquad 19 \\ \underline{36} \qquad \qquad \underline{15} \\ 3 \qquad \qquad 4 \end{array}$$

$$\begin{array}{r} 6 \overline{) 119} \quad (19) \qquad 7 \overline{) 119} \quad (17) \\ \underline{6} \qquad \qquad \underline{7} \\ 59 \qquad \qquad 49 \\ \underline{54} \qquad \qquad \underline{49} \\ 5 \qquad \qquad \times \end{array}$$

So, no. of mangoes will be 119.

18. (c) We have to check by the options,

$$\text{By (a) } 27 + 27 = 54 (\times)$$

$$\text{By (b) } 24 + 27 = 51 (\times)$$

$$\text{By (c) } 47 + 27 = 74 (\checkmark)$$

Hence (c) is the correct option.

19. (d) Let Radha income and expenditure are $7x$ and $5x$ respectively.

As we know that,

Saving = Income – Expenditure

$$7x - 5x = 2000$$

$$\Rightarrow 2x = 2000 \Rightarrow x = 1000$$

\therefore Monthly income of Radha

$$= 7x = 7 \times 1000 = 7000$$

Annual income of Radha

$$= 12 \times 7000 = 84000.$$

20. (b) Let the length of breadth of rectangular lawn are $3x$ and $5x$ respectively.

Perimeter of rectangle is $2(l + b)$

So, the perimeter of the lawn,

$$2(l + b) = \frac{3200}{2}$$

$$\Rightarrow 2(l + b) = 1600$$

$$\Rightarrow 2(3x + 5x) = 1600$$

$$\Rightarrow 16x = 1600 \Rightarrow x = 100$$

\therefore Length of the lawn $= 3x = 3 \times 100 = 300$ m

Breadth of the lawn $= 5x = 5 \times 100 = 500$ m

Area of rectangle lawn $= l \times b$

$$= 300 \times 500 = 150000 \text{ m}^2$$

\therefore Cost of developing the rectangular lawn $= 150000 \times 10 = 1500000$.

21. (b) Let the share of A, B and C are $4x$, $7x$ and $9x$ respectively.

We have given that,

B's share = ₹ 2989

$$\Rightarrow 7x = 2989 \Rightarrow x = 427$$

$$\therefore \text{Total amount} = 4x + 7x + 9x = 20x = 20 \times 427 = ₹ 8540$$

22. (a) Required teacher's age

$$= 41 \times 19 - 40 \times 18$$

$$= 779 - 720 = 59 \text{ years}$$

23. (c) Required greatest no.

$$= \text{HCF}(|3026 - 11|, |5053 - 13|)$$

$$= \text{HCF}(3015, 5040) = 45.$$

$$3015 = 3 \times 3 \times 5 \times 67$$

$$5040 = 2 \times 2 \times 2 \times 2 \times 3 \times 3 \times 5 \times 7$$

$$\text{HCF}(3015, 5040) = 3 \times 3 \times 5 = 45.$$

24. (a) Cost price of the chair = ₹ 500

Selling price of the chair = ₹ 550

$\therefore \text{SP} > \text{CP} \rightarrow \text{Profit}$

$$\% \text{ Profit} = \frac{\text{SP} - \text{CP}}{\text{CP}} \times 100$$

$$= \frac{550 - 500}{500} \times 100$$

$$\text{Gain \%} = \frac{50}{500} \times 100 = 10\%.$$

25. (c) Distance = Speed \times Time

$$= 5 \times 28 = 140 \text{ km}$$

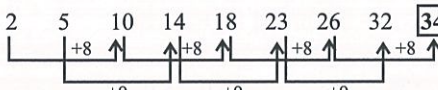
Now speed $= 5 + 2 = 7 \text{ km/h}$

$$\therefore \text{Time} = \frac{\text{Distance}}{\text{Speed}}$$

$$\text{Time required} = \frac{140}{7} = 20 \text{ h.}$$

26. (b) Length of other price $= \frac{7}{8} - \frac{1}{4}$

$$= \frac{7-2}{8} = \frac{5}{8} \text{ meter}$$

27. (b) 

28. (d) $\therefore W_1 = W_2 \therefore M_1 \times D_1 = M_2 \times D_2$

$$30 \times 16 = 8 \times D_2$$

$$D_2 = \frac{30 \times 16}{8} = 60 \text{ days}$$

29. (d) Required time

$$= \text{LCM}(75, 50, 30)$$

$$= 2 \times 3 \times 5 \times 5 = 150 \text{ min} = \frac{5}{2} \text{ hour}$$

30. (b) We know, 1 kg = 1000 gm

$\therefore 26 \text{ kg } 5 \text{ gram}$

$$= 26 \text{ kg} + \frac{5}{1000} \text{ kg}$$

$$= 26 + 0.005 = 26.005 \text{ kg.}$$

31. (d) We know,

SI = Amount – Principle

$$= 7800 - 6000 = ₹ 1800$$

$$\therefore \text{SI} = \frac{P \times r \times t}{100}$$

$$1800 = \frac{6000 \times r \times 5}{100}$$

$$r = \frac{1800 \times 100}{6000 \times 5}$$

$$r = 6\%.$$

32. (a) \because Volume of cube $= a^3$
 So, $a^3 = 729 \Rightarrow a = 9$ m
 \because Depth of a cubical pond $= 9$ m.
33. (a) $3 \times 7 + 4 - 6 + 3 - 7 + 45 + 5 \times 4 + 49$
 According to BODMAS rule
 $= 3 \times 7 + 4 - 6 + 3 - 7 + 9 \times 4 + 49$
 $= 21 + 4 - 6 + 3 - 7 + 36 + 49$
 $= 110 - 9 = 101$.
34. (a) According to the question,
 Required time $= \frac{\text{Distance}}{\text{Speed}}$
 $= \frac{\text{Length of train} + \text{Length of platform}}{\text{Speed of train}}$
 $= \frac{100 + 150}{60 \times \frac{5}{18}} \quad \left[\because 1 \text{ km/h} = \frac{5}{18} \text{ m/s} \right]$
 $= \frac{250 \times 18}{60 \times 5} = 15 \text{ sec.}$
35. (c) According to the question,
 Ashu's 1 day work $= \frac{1}{12}$
 Pranav's 1 day work $= \frac{1}{10}$
 Ashu, Pranav and Ramu's 1 day work $= \frac{1}{5}$
 Ramu's one day work $= \frac{1}{5} - \left(\frac{1}{12} + \frac{1}{10} \right)$
 $= \frac{12 - 5 - 6}{60} = \frac{1}{60}$
 \therefore Ramu complete the work $= 60$ days.
36. (a) Given that
 $\text{LCM}(a, b) = 28 \times \text{HCF}(a, b) \dots (1)$
 $\because \text{LCM}(a, b) + \text{HCF}(a, b) = 1740 \dots (2)$
 From equations. (1) and (2)
 $28 \text{HCF}(a, b) + \text{HCF}(a, b) = 1740$
 $29 \text{HCF}(a, b) = 1740$
 $\text{HCF}(a, b) = 60$
 $\text{LCM}(a, b) = 28 \times 60 = 1680$
 \because We know that
 $\text{LCM}(a, b) \times \text{HCF}(a, b) = a \times b$
 $60 \times 1680 = 240 \times b$
 \therefore Second no. $b = \frac{60 \times 1680}{240} = 420$.
37. (c) According to the question,
 Clock rings again after LCM (6, 8, 12, 18) second.
 $\text{LCM}(6, 8, 12, 18) = 2 \times 2 \times 2 \times 3 \times 3 = 72$
 \therefore In 6 minutes clock rings
 $= \frac{6 \times 60}{72} = 6$
 $= 6 + 1$ (In starting) $= 7$ times.
38. (b) We have, $\text{LCM}(18, 21, 24)$
 $= 2 \times 2 \times 2 \times 3 \times 3 \times 7 = 504$
 Common remainder
 $\Rightarrow 18 - 7 = 11$
 $\Rightarrow 21 - 10 = 11$
 $\Rightarrow 24 - 13 = 11$
 In each case, remainder is equal i.e. 11.
 We have to find of multiple 504, which is divisible by 23 after subtracting 11.
 $504 \times 1 - 11 = 493$ (✗)
 $504 \times 2 - 11 = 997$ (✗)
 $504 \times 3 - 11 = 1501$ (✗)
 $504 \times 4 - 11 = 2005$ (✗)
 $504 \times 5 - 11 = 2509$ (✗)
 $504 \times 6 - 11 = 3013$ (✓)
 $\therefore 3013$ is the required no.
39. (c) Required largest vessel
 $= \text{HCF}(75, 45) = 3 \times 5 = 15$ litres.
 $75 = 3 \times 5 \times 5$
 $45 = 3 \times 3 \times 5$
40. (c) Cost price of the table $= ₹ 1000$
 Selling price of the table $= ₹ 800$
 $\because \text{SP} < \text{CP} \rightarrow \text{Loss}$
 $\% \text{ Loss} = \frac{\text{CP} - \text{SP}}{\text{CP}} \times 100$
 $= \frac{1000 - 800}{1000} \times 100$
 $= \frac{200}{10} \times 100 = 20\% \text{ Loss.}$
41. (b) Let the initial average $= x$ kg
 and the weight of new boy $= y$ kg
 $6 \times x + y - 20 = 6(x + 5)$
 $6x + y - 20 = 6x + 30$
 $y - 20 = 30$
 $y = 50$ kg.

42. (b) Average speed = $\frac{\text{Total distance}}{\text{Total time taken to cover the distance}}$

$$\begin{aligned} & \frac{40 \text{ km}}{\frac{10}{10}h + \frac{10}{20}h + \frac{10}{30}h + \frac{10}{40}h} \\ &= \frac{40 \text{ km}}{1 + \frac{1}{2} + \frac{1}{3} + \frac{1}{4}} \\ &= \frac{40 \times 12}{12 + 6 + 4 + 3} = \frac{40 \times 12}{25} = \frac{480}{25} \\ &= 19.2 \text{ km/h} \end{aligned}$$

43. (a) Let the length of the garden = x m
 \therefore Area of rectangle = $l \times b$
 $x \times 5 = 300 \therefore x = \frac{300}{5} = 60 \text{ m.}$

44. (c) Let the number = x
 Then, according to question
 $x^2 + (28)^2 = 1808$
 $x^2 + 784 = 1808$
 $x^2 = 1808 - 784 \quad x^2 = 1024$
 $x = \sqrt{1024} = 32.$

45. (a) The cost of a dozen (12) pens = ₹ 180

$$\text{The cost of a pen} = \frac{180}{12} = ₹ 15$$

$$\text{The cost of 8 ball pens} = ₹ 56$$

$$\text{The cost of 1 ball pen} = \frac{56}{8} = ₹ 7$$

$$\text{Required ratio} = 15 : 7.$$

46. (c) Diesel requires for covering 594 km distance = 108 litres

Diesel requires for covering 1 km distance

$$= \frac{108}{594} \text{ lit/km}$$

Diesel requires for covering 1650 km distance

$$= \frac{108}{594} \times 1650 = 300 \text{ litres.}$$

47. (d) $SI = \frac{P \times r \times t}{100}$
 $= \frac{5000 \times \frac{15}{2} \times 3}{100}$

$$= \frac{5000 \times 15 \times 3}{200} = \frac{22500}{200} = ₹ 1125$$

48. (a) According to the question,
 Let the angles of triangle are x° , $2x^\circ$ and $3x^\circ$ respectively.

Then, the sum of three angles of a triangle = 180° .

$$x + 2x + 3x = 180^\circ$$

$$6x = 180^\circ \quad x = 30^\circ$$

Then angles are 30° , 60° and 90° .

49. (c) According to the question,

Let the numbers are x and y

$$\text{Then, } x - y = 36 \quad \dots(1)$$

$$x + y = 48 \quad \dots(2)$$

Equation. (1) + Equation. (2)

$$2x = 36 + 48$$

$$2x = 84 \Rightarrow x = 42$$

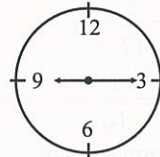
$$x = 42 \text{ put in equation. (1)}$$

$$42 - y = 36$$

$$y = 42 - 36 = 6$$

\therefore Numbers are 42 and 6.

50. (c) At 9 : 15



GENERAL KNOWLEDGE

51. (c) Captain Vikram Batra was awarded Param Vir Chakra, India's highest military decoration, for his distinguished acts of valour during the Kargil War in the year 1999.

52. (b) In 2010, in Uttarakhand, Sanskrit was given the status of an official language during the tenure of the chief minister Ramesh Pokhriyal. Uttarakhand is the only state to have accorded Sanskrit this status.

53. (b) Muppavarapu Venkaiah Naidu is an Indian politician and the current Vice President of India and the Chairman of the Rajya Sabha, in office since 11 August 2017. Previously, he served as the Minister of Housing and Urban Poverty Alleviation, Urban Development and Information and Broadcasting in the Modi Cabinet.

54. (b) Paediatricians diagnose and treat health conditions that affect babies, children and young people.

55. (b) A constellation is an area on the celestial sphere in which a group of visible stars forms a perceived outline or pattern, typically representing an animal, mythological person or creature, or an inanimate object.
56. (c) Dry ice is the solid form of carbon dioxide (CO₂). It is used primarily as a cooling agent, but is also used in fog machines at theatres for dramatic effects. Its advantages include lower temperature than that of water ice and not leaving any residue.
57. (b) Rajya Sabha is a permanent body and is not subject to dissolution. However, one third of the members retire every second year, and are replaced by newly elected members. Each member is elected for a term of six years. The Vice President of India is the ex-officio Chairman of Rajya Sabha.
58. (a) Pullela Gopichand is a former Indian badminton player. Presently, he is the Chief National Coach for the Indian Badminton team. He won the All England Open Badminton Championships in 2001 becoming the second Indian to achieve this feat after Prakash Padukone. He runs the Gopichand Badminton Academy.
59. (b) Bharat Sanchar Nigam Limited (BSNL) does not sell mobiles. It is an Indian state-owned telecommunications company, headquartered in New Delhi. It was incorporated by Department of Telecommunications, Ministry of Communications, Government of India on 1 October 2000.
60. (a) Hovercraft is a vehicle which is capable of travelling over land and water.
61. (d) The Indian Space Research Organisation is the national space agency of India. Its headquarter is in Bengaluru. It operates under Department of Space (DoS) which is directly overseen by the prime minister of India while chairman of ISRO acts as executive of DoS as well.
62. (b) The invocation to Lord Varuna (The God of Sea) in the Vedas was adopted by Indian Navy for its emblem, with the Motto: "Sam no Varunah", meaning: "Be auspicious unto us Oh Varuna".
63. (c) The liver is the largest solid organ and the largest gland in the human body. It carries out over 500 essential tasks. The roles of the liver include detoxification, protein synthesis, and the production of chemicals that help digest food.
64. (c) Muhammad Iqbal is widely known as Allama Iqbal. He is best remembered in India as the man who composed one of the most patriotic songs, 'Saare jahan se achha Hindostan humara'.
65. (d) The Pacific Ocean is the largest and deepest of Earth's oceanic divisions. It extends from the Arctic Ocean in the north to the Southern Ocean in the south. Challenger Deep in the Mariana Trench, located in the western north Pacific, is the deepest point in the world, reaching a depth of 10,928 meters.
66. (c) The Parliament fixes the salaries and the allowances of the Speaker of Lok Sabha. The Salary of Members of Parliament is governed by Salary and Allowances and Pension to Members of Parliament Act 1954.
67. (d) Article 14 of the Constitution of India provides for equality before the law or equal protection of the laws within the territory of India. It states: "The State shall not deny to any person equality before the law or the equal protection of the laws within the territory of India."
68. (b) 1024 kb = 1 MB
69. (b) Hirakund dam is built on Mahanadi river. Hirakund Dam is built across the Mahanadi River, about 15 kilometres from Sambalpur in the state of Odisha. Behind the dam extends a lake, Hirakund Reservoir is 55 km long.
70. (a) Iodine deficiency is a lack of the trace element iodine, an essential nutrient in the diet. It may result in metabolic problems such as goiter, sometimes as an endemic goiter as well as cretinism due to untreated congenital hypothyroidism, which results in developmental delays and other health problems.
71. (c) Vallabhbhai Jhaverbhai Patel is popularly known as Sardar Patel, and also known as iron man of India. He served as the first Deputy Prime Minister of India. He was an Indian barrister, and a senior leader of the Indian National Congress who played a leading role in the country's struggle for independence.
72. (d) Kabbadi, kho-kho and hockey are played in India whereas rugby is played in England, Fiji, Finland and France.
73. (b) Archaeologists study things that were made and used in the past.
74. (b) The ratio of width to the length of National Flag of India is 2:3.

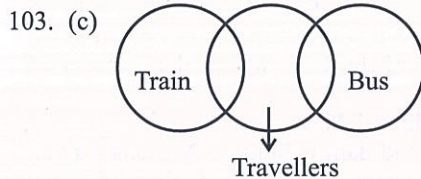
75. (d) Wagah, an army outpost on Indo-Pak border – between Amritsar and Lahore, is an elaborate complex of buildings, roads and barriers on both sides. The daily highlight is the evening “Beating the Retreat” ceremony. Soldiers from both countries march in perfect drill.

LANGUAGE

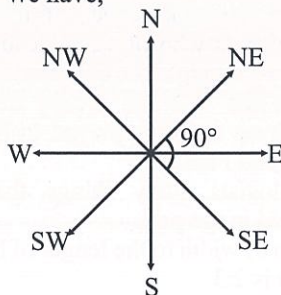
76. (d) 77. (c) 78. (d) 79. (a) 80. (c)
 81. (a) 82. (b) 83. (c) 84. (d) 85. (a)
 86. (d) 87. (d) 88. (d) 89. (c) 90. (a)
 91. (c) 92. (a) 93. (d) 94. (a) 95. (a)
 96. (c) 97. (b) 98. (d) 99. (b) 100. (d)

INTELLIGENCE TEST

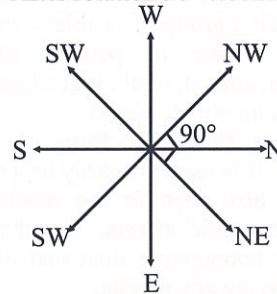
101. (c)
 102. (c) Book is different from the group, while all three is related to photography.



104. (d) As car is runs by petrol. Similarly, television is to run by electricity.
 105. (a)
 106. (b) Total no. of boys
 = Boys position from left + Boys position from right – 1
 = 19 + 19 – 1 = 37.
 107. (b)
 108. (c) As we go to labe education in school. Similarly we go to bank to take loan.
 109. (a) 110. (d)
 111. (b) As Sun is a star while all others are planet.
 112. (c)
 113. (a) We have,

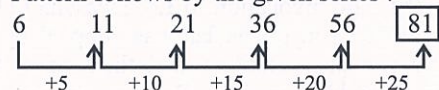


After rotation 90° clockwise

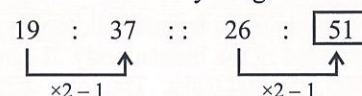


114. (c)
 115. (d)
 116. (a) Except student all are the profession.
 117. (a)
 118. (c) We have,
 $12 + 6 \div 3 - 2 \times 8$
 After interchange the sign
 $= 12 \div 6 - 3 \times 2 + 8$
 According to BODMAS rule
 $= 2 - 3 \times 2 + 8$
 $= 2 - 6 + 8 = 10 - 6 = 4.$
 119. (d)
 120. (a) $16 \times 3 + 5 - 2 \div 4$
 After interchange the sign, we get,
 $= 16 + 3 - \frac{5}{2} \times 4$
 According to BODMAS rule
 $= 16 + 3 - \frac{5}{2} \times 4$
 $= 16 + 3 - 5 \times 2$
 $= 16 + 3 - 10 = 19 - 10 = 9.$
 121. (d) Total student = Left + Right – 1
 $49 = 18 + \text{Left} - 1$
 Left = $49 - 17 = 32.$

122. (b)
 123. (c)
 124. (c) Pattern follows by the given series :



125. (b) Pattern follows by the given series :







Sainik School Entrance Exam Solved Paper-2018

(Class-VI)

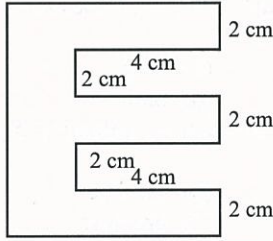
MATHEMATICS

1. The greatest 8-digits number with given digits 5, 8, 7, 5, 2, 0, 6 and 1 is
 (a) 88765210 (b) 87765210
 (c) 88765521 (d) 87655210
2. Choose the correct option if numbers 52806, 52086, 52860, 52800 and 58260 are arranged in ascending order
 (a) 52086, 52806, 52860, 52800, 58260
 (b) 52800, 52860, 52086, 58260, 52806
 (c) 52086, 52800, 52806, 52860, 58260
 (d) 52800, 52806, 52860, 52086, 58260
3. A number that must be subtracted from 925564 to make it equal to the sum of 234251 and 352421 will be
 (a) 238892 (b) 338882
 (c) 338892 (d) 337892
4. The product of 10101×25 is
 (a) 252725 (b) 252525
 (c) 25025025 (d) 272725
5. The average age of 3 sisters is 15. If the ages of 2 sisters are 12 years and 15 years, the age of the third sister is
 (a) 21 years (b) 17 years
 (c) 18 years (d) 16 years
6. $\frac{7}{6}$ of a leap year = week.
 (a) 427 (b) 35
 (c) 61 (d) 13
7. Write Roman numerals CDXLIX in Arabic numerals
 (a) 569 (b) 449
 (c) 549 (d) 469
8. Value of $(700 \div 10) - \{(12 \times 8) \div (34 - 10)\}$ is
 (a) 69 (b) 68
 (c) 67 (d) 66
9. $2 = \dots\dots\dots\%$
 (a) 200 (b) 0.02
 (c) $\frac{2}{100}$ (d) 20
10. Vicky bought a bicycle for ₹ 3,000.00 and sold it for ₹ 2,700.00. What was his loss or gain per cent?
 (a) 10% loss (b) 10% gain
 (c) 11.11% gain (d) 11.11% loss
11. A train leaves Hyderabad at 01:15 PM on Friday and reaches Chennai at 07:30 AM on Saturday. The duration of the journey is
 (a) 18 hrs 30 min (b) 17 hrs 45 min
 (c) 18 hrs 15 min (d) 17 hrs 15 min
12. Karishma bought two necklace for ₹1,39,500.00. She sold one of them for ₹75,000.00 and the other one for ₹80,000.00. How much money did she gain?
 (a) ₹ 25,500.00 (b) ₹ 15,500.00
 (c) ₹ 20,500.00 (d) ₹ 15,000.00
13. A tall office building has 85 floors. Each floor has 48 windows. Each window is to be decorated with 64 tiny bulbs. How many bulbs would be needed to decorate all the windows?
 (a) 261120 (b) 273920
 (c) 456960 (d) 209920
14. The smallest 5-digit number that is divisible by 19 is
 (a) 10019 (b) 10013
 (c) 10032 (d) 10000
15. The greatest number that divides 38 and 68 leaving 8 as remainder in each case is
 (a) 10 (b) 15
 (c) 60 (d) 30
16. The decimal notation of 10 kg 2 dag 6 g is
 (a) 10.260 kg (b) 10.206 kg
 (c) 10.026 kg (d) 10.006 kg
17. Which of the following pair of angles are supplementary?
 (a) 46° and 44° (b) 113° and 67°
 (c) 245° and 115° (d) 90° and 180°
18. The perimeter of the rectangle and square are same. Length and breadth of the rectangle are 10 cm and 8 cm respectively. What is the area of the square?
 (a) 114 sq. cm. (b) 36 sq. cm.
 (c) 81 sq. cm. (d) 64 sq. cm.

19. Which of the following measures of three angles can be those of a triangle?
 (a) $52^\circ, 69^\circ, 79^\circ$ (b) $30^\circ, 69^\circ, 71^\circ$
 (c) $132^\circ, 169^\circ, 59^\circ$ (d) $32^\circ, 69^\circ, 79^\circ$
20. Which statement is true?
 (a) All hexagons are triangles because they have at least 3 sides.
 (b) All octagons are polygons because they have at least 3 sides.
 (c) All parallelograms are rectangles because they have 2 sets of parallel sides.
 (d) All rhombus are squares because they have 4 sides that are all the same length.
21. The fraction equivalent to 1.25 is :
 (a) $1\frac{1}{4}$ (b) $12\frac{1}{2}$ (c) $1\frac{1}{8}$ (d) $12\frac{1}{4}$
22. The sum of two numbers is 11009. If one of them is 9999, the other number is
 (a) 1010 (b) 1110
 (c) 2110 (d) 21008
23. Simplify : $6 \div 6 + 6 \times 6 - 6$
 (a) 1 (b) 7
 (c) 31 (d) 36
24. Simplify : $1\frac{1}{24} - 1 + \frac{7}{36}$
 (a) $\frac{17}{72}$ (b) $1\frac{17}{72}$
 (c) $\frac{7}{60}$ (d) $\frac{5}{60}$
25. Sara poured $1\frac{1}{8}$ cups of lemonade each in 5 glasses. What was the total amount of lemonade Sara poured in 5 glasses?
 (a) $3\frac{7}{8}$ cups (b) $5\frac{1}{8}$ cups
 (c) $5\frac{5}{8}$ cups (d) $6\frac{1}{8}$ cups
26. Ritu has $\frac{1}{4}$ of a sack of rice. She divides the rice equally into 7 bags. What fraction of the full sack of rice is in each bag?
 (a) $\frac{1}{28}$ (b) $\frac{1}{7}$
 (c) $\frac{2}{11}$ (d) $\frac{11}{28}$
27. $1 + 0 + \frac{9}{100} + \frac{3}{1000} =$
 (a) 1.093 (b) 1.903
 (c) 1.93 (d) 1.0093
28. Which two quadrilaterals have both 2 pairs of parallel sides and 2 acute angles?
 (a) 
 (b) 
 (c) 
 (d) 
29. What is the sum of 20.08, 20.008, 20.088 and 20.888?
 (a) 81.064 (b) 81.604
 (c) 80.064 (d) 80.888
30. Round off 37504 to the nearest hundreds
 (a) 37500 (b) 37000
 (c) 38000 (d) 30000
31. A train is running at a speed of 75 kms/hour. How much time will it take to cover a distance of 350 kms?
 (a) 4 hrs (b) 5 hrs
 (c) 4 hrs 30 min (d) 4 hrs 40 min
32. A block of wood is in the form of a cube, its edge is 4 m. How many rectangular pieces of dimension $20\text{ cm} \times 10\text{ cm} \times 5\text{ cm}$ can be cut from the block?
 (a) 640 (b) 64
 (c) 6400 (d) 64000
33. In how many years, a sum of ₹ 500 at 5% per annum will amount to ₹ 600?
 (a) 3 years (b) 4 years
 (c) 5 years (d) 6 years
34. The average of four numbers is 30. If the sum of first three numbers is 85, the fourth number is :
 (a) 35 (b) 25 (c) 45 (d) 55
35. What percent of 10 km is 10 m?
 (a) 0.1% (b) 1.0%
 (c) 10.0% (d) 40.0%

36. The number of square tiles, of side 15 cm, required for flooring a room of size $3.6 \text{ m} \times 4.5 \text{ m}$, will be:
 (a) 720 (b) 360
 (c) 10800 (d) 5400
37. The smallest odd number formed by using the digits 1, 2, 3, 4 and 5 is :
 (a) 12345 (b) 12435
 (c) 12453 (d) 12534
38. Which of the following numbers are arranged in ascending order?
 (a) $\frac{1}{3}, \frac{1}{2}, 0.25$ (b) $0.25, \frac{1}{2}, \frac{1}{3}$
 (c) $0.25, \frac{1}{3}, \frac{1}{2}$ (d) $\frac{1}{2}, \frac{1}{3}, 0.25$
39. A boat is flowing in still water at the speed of 18 km/hour. The speed of boat in m/sec is:
 (a) 50 m/sec (b) 72 m/sec
 (c) 7.2 m/sec (d) 5 m/sec
40. The value of 200°F in degree Celsius is
 [Use $C = \frac{5}{9}(F - 32)$]
 (a) 80.3°C (b) 93.3°C
 (c) 100.3°C (d) 105.3°C
41. Find the difference between the number 36490 and the number obtained by interchanging the places of 6 and 9 :
 (a) 2970 (b) 3030
 (c) 2070 (d) 2790
42. Convert $(3.75 \text{ of } 5\% + 7.25 \text{ of } 10\%)$ into decimals :
 (a) 0.9152 (b) 0.9521
 (c) 0.9125 (d) 0.9527
43. What is the next row of numbers?

28	84	112
38	114	152
48	144	192

 (a) 58 174 232
 (b) 58 184 244
 (c) 68 204 272
 (d) 68 214 292
44. A boy runs around a rectangular field of length 40 m and breadth 25 m. How much distance will he run if he takes 4 rounds of that field.
 (a) 4000 m (b) 260 m
 (c) 520 m (d) 400 m
45. A room is 15 m long and 10 m broad. Find the cost of carpeting its floor if 1 sq cm of carpet costs ₹ 2.00.
 (a) ₹ 300 (b) ₹ 300000
 (c) ₹ 30000 (d) ₹ 3000000
46. The cost of a pack of 15 balls is ₹ 300 and a pack of 12 shuttle cock is ₹ 96. If Raghu bought 1 ball and 1 shuttle cock, how much would he pay to shopkeeper?
 (a) ₹ 24 (b) ₹ 22
 (c) ₹ 26 (d) ₹ 28
47. The greatest number which divides 624 and 936 exactly is 312. Find the smallest number which is divisible by 624 and 936?
 (a) 1820 (b) 1872
 (c) 1272 (d) 1864
48. A person purchased an old bicycle for ₹ 450 and spends ₹ 50 on its maintenance. If he sold the old bicycle for ₹ 600 then his profit percentage is
 (a) 15% (b) 18%
 (c) 20% (d) 25%
49. Find the area of figure given below :

 (a) 56 sq cm (b) 48 sq cm
 (c) 44 sq cm (d) 60 sq cm
50. Amar spent $\frac{3}{8}$ of his time studying Science. He spent $\frac{2}{5}$ as much time studying English as Science. What fraction of Amar's study time was spent studying English?
 (a) $\frac{1}{40}$ (b) $\frac{1}{20}$
 (c) $\frac{31}{40}$ (d) $\frac{15}{16}$

GENERAL KNOWLEDGE

51. Which feature helps a coconut fruit to float in water?
 (a) a fibrous outer covering
 (b) a spongy part
 (c) presence of hook
 (d) presence of spine
52. Which of the following is a non-communicable disease?
 (a) chickenpox (b) beriberi
 (c) common cold (d) measles

53. The rabies virus is carried by
(a) cockroaches (b) hens
(c) dogs (d) rabbits
54. Milk turning sour is a
(a) physical change (b) reversible change
(c) chemical change (d) none of these
55. The wearing off or carrying away of soil by the action of water or wind is called
(a) storm (b) flood
(c) soil erosion (d) deforestation
56. Whales and dolphins are classified as
(a) fishes (b) reptiles
(c) mammals (d) amphibians
57. The working of the internal organs of our body is controlled by this system
(a) reproductive (b) circulatory
(c) respiratory (d) nervous
58. A person might faint if his heart does not send enough blood to his
(a) feet (b) liver
(c) kidneys (d) brain
59. The upward push of water on a floating object is called
(a) buoyant force (b) volume
(c) density (d) pressure
60. The first artificial satellite launched by India in 1975 was
(a) Sputnik I (b) Aryabhata
(c) Charaka (d) Insat
61. Those who study earthquakes are called
(a) geologist (b) seismologists
(c) astronomers (d) astrologers
62. Which of the following gas is not a greenhouse gas?
(a) carbon dioxide (b) oxygen
(c) methane (d) CFC
63. The model of the earth is called a
(a) circle (b) sphere
(c) globe (d) marble
64. Agriculture cannot be practiced on mountains on a large scale as they
(a) are thinly populated
(b) have a shortage of land
(c) have a thin soil cover
(d) have unsuitable climate
65. The condition of the atmosphere at a given place and time is called
(a) season (b) climate
(c) altitude (d) weather
66. The highway of Central Africa is another name for
(a) River Nile (b) River Congo
(c) River Zimbani (d) River Kwango
67. Most of the grasslands of the world are found in the
(a) Tropical Zone (b) Temperate Zone
(c) Torrid Zone (d) Frigid Zone
68. Any sound louder than 90 decibels can cause
(a) asthma (b) digestive problems
(c) typhoid (d) loss of hearing
69. Aligarh Muslim University is associated with
(a) Rabindranath Tagore
(b) Tansen
(c) Kalidas
(d) Syed Ahmad Khan
70. The English Government introduced the policy of divide and rule to
(a) educate Indian
(b) encourage nationalism
(c) reform Indians
(d) suppress nationalism
71. Purna Swaraj means
(a) non-cooperation
(b) civil disobedience
(c) boycott
(d) complete Independence
72. The Lok Sabha can have a maximum of
(a) 12 members (b) 552 members
(c) 238 members (d) 543 members
73. The League of Nations was formed to prevent
(a) destruction (b) loss of lives
(c) droughts (d) another world war
74. The world has been made smaller due to
(a) wheels
(b) steam engines
(c) fast means of transport
(d) cars
75. Internet is a source of information on
(a) documentaries (b) e-mail
(c) any topic (d) a few topic

LANGUAGE

Read the following passage and answer the questions.

HORACE DENBY

Everyone thought that Horace Denby was a good and honest citizen. He was about fifty years old and unmarried, and he lived with a housekeeper who worried over his health. In fact, he was usually very well and happy, except for attacks of hay fever in summer. He made expensive locks and was successful

enough at his business to have two helpers. Yes, Horace Denby was good and respectable - but not completely honest.

Fifteen years ago, Horace had served his first and only sentence in prison for stealing jewels. The priest at the prison had liked Horace - everyone did - and had tried to help him to live an honest life. But Horace did not want to become honest. He only wanted to make sure that his dishonesty never got him into trouble again.

76. Horace Denby was
 (a) old (b) unmarried
 (c) handicapped (d) both (a) & (b)
77. worried about the health of Horace.
 (a) his wife (b) the priest
 (c) his housekeeper (d) Horace
78. For stealing jewels, Horace was sent to prison
 (a) only once (b) twice
 (c) thrice (d) never
79. The profession of Horace was
 (a) businessman (b) thief
 (c) housekeeper (d) locksmith
80. Choose the word which means the opposite of EXPENSIVE.
 (a) cheap (b) luxurious
 (c) costly (d) heavy
81. Choose the word which means almost same as UNMARRIED.
 (a) handsome (b) widow
 (c) young (d) bachelor

Choose the most appropriate option given against each question.

82. A herd of cows or
 (a) birds (b) elephant
 (c) sheep (d) horse
83. This is my book and that is
 (a) yours (b) your
 (c) our (d) ours
84. Rajan's father and Rohan's father businessmen.
 (a) are (b) have
 (c) is (d) has
85. My friends been asking for the party photographs.
 (a) do (b) does
 (c) have (d) has

86. Rakesh his mother tongue very fluently.
 (a) speak (b) speaking
 (c) speaks (d) None of these
87. Ankit and his family in Europe for three weeks.
 (a) have been travelling
 (b) have travelling
 (c) been travelling
 (d) have travelled
88. Bharti yoga classes these days.
 (a) attending (b) has attending
 (c) is attending (d) has been attending
89. My house is as yours.
 (a) big (b) as big
 (c) bigger (d) biggest
90. This is the comics I have ever read.
 (a) most interesting (b) more interesting
 (c) less interesting (d) None of these

Select one word from the options for the given definition.

91. A book or work of art whose author is unknown:
 (a) anonymous (b) playwright
 (c) novelist (d) poet
92. A person who believes in the existence of God:
 (a) atheist (b) theist
 (c) agnostic (d) pacifist

Select the most appropriate option for question tag.

93. I have completed my homework,?
 (a) have I (b) has I
 (c) do I (d) haven't I
94. He does not do his work sincerely,?
 (a) does he (b) did he
 (c) doesn't he (d) do he

Rearrange the following words/groups of words to make meaningful sentences. Choose the correct sequence given in the options.

95. (A) and grandpa / (B) my grandma / (C) too much / (D) love each other.
 (a) BDAC (b) BACD
 (c) DBCA (d) BADC
96. (A) was very pretty / (B) in her childhood / (C) my grandma / (D) and beautiful.
 (a) CBAD (b) ADBC
 (c) CADB (d) CDAB

Mark the option with the correct spelling of the given words :

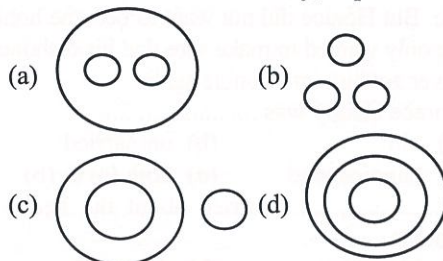
97. (a) address (b) adres
 (c) adress (d) addres

98. (a) appresiation (b) appreciation
(c) appreciason (d) apreiciation
- Choose the appropriate option to fill in the blanks:**
99. 'Books' is for 'book', is for 'ship'.
(a) sheeps (b) ships
(c) shepherds (d) sheep
100. 'Kids' is for 'kid', is for 'child'.
(a) childs (b) child
(c) children (d) None of these

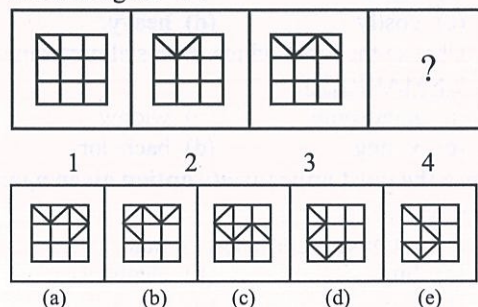
INTELLIGENCE TEST

101. Find the missing number in the number series given below :
20, 30, 42, ?
(a) 64 (b) 56
(c) 62 (d) 54
102. Victory is to Joy as is to Sorrow.
(a) Defeat (b) Depression
(c) Loneliness (d) Cry
103. Find the missing number that has same relation to 289 as 13 has to 169.
 $169 : 13 :: 289 : ?$
(a) 19 (b) 17
(c) 27 (d) 23
104. If TRAIN is written as WUDLQ then BUS would be written as
(a) EXU (b) DWU
(c) EXV (d) VXE
105. If FLOW is related to RIVER then STAGNANT is related to
(a) Pool (b) Rain
(c) Stream (d) Canal
106. Choose the word which is least like the other words in the group?
(a) Ladder (b) Staircase
(c) Bridge (d) Escalator
107. If we arrange the given words in alphabetical order, which word would come at the second place, choose the correct alternative?
(a) Plane (b) Plain
(c) Plenty (d) Player
108. Choose the alternative that resembles the water image of the given word below :
A1M3b
(a) V1W3P (b) V1W3P
(c) V1W3P (d) V1W3P
109. Choose the word which is least like the other words in the group.
(a) Eyes (b) Ear
(c) Hand (d) Scarf

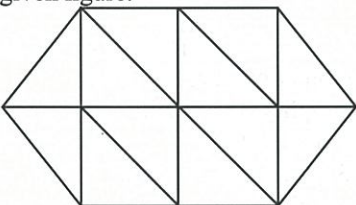
110. Choose the alternative that will continue the number series below :
2, 3, 5, 7, 11, 13, ?
(a) 15 (b) 19
(c) 17 (d) 21
111. Which of the following diagram indicates the best relation between Country, Nepal and India?



112. Choose the alternative that will continue the number series below :
5, 11, 19, 29, ?, 55
(a) 39 (b) 41
(c) 37 (d) 43
113. A FISH is to GILLS then a MAN is to
(a) Ear (b) Eye
(c) Lungs (d) Nose
114. Which figure among the five alternatives (a), (b), (c), (d) and (e) would replace the question mark in figure '4'?



115. Choose the word which is least like the other words in the group.
(a) Sun (b) Planets
(c) Stars (d) Satellites
116. If Maya is the only daughter of Richa's grandmother's brother, how is Maya's daughter related to Richa?
(a) Niece (b) Cousin
(c) Aunt (d) Mother

117. O, P, Q, R, S and T are standing on a bench according to their height. P is taller than O but shorter than S. Only S is taller than T. R is shorter than P but taller than Q. Who is the shortest?
 (a) O (b) Q
 (c) P (d) Cannot be said
118. If '+' means '÷', '×' means '-', '÷' means '+' and '-' means '×', then what would be the answer of the question?
 $16 \div 8 \times 6 - 2 + 12 = ?$
 (a) 22 (b) 24
 (c) 23 (d) 20
119. Count the number of triangles present in the given figure.
- 
- (a) 16 (b) 17
 (c) 18 (d) 19
120. If DOG is to RABIES then MOSQUITO is to?
 (a) Plague (b) Death
 (c) Malaria (d) Sting
121. It is 3 O'clock in a watch and it is rotated by 10 degree in a manner such that if the minute hand points towards the North-East, then hour hand will point towards which direction?
 (a) South (b) South-West
 (c) North-West (d) South-East
122. LOVE is to HATE then FRIEND is to?
 (a) Trust (b) Companion
 (c) Enemy (d) Despire
123. If the given alpha-numeric series is seen in mirror, which alternative would resemble its mirror image?
ANS43Q12
 (a) AN2FE0IE (b) SIQEF2NIA
 (c) 2NIAEF02E (d) ISWFEAN2
124. Given that A and B are a married couple. If X and Y are brothers and X is the brother of A. How is Y related to B?
 (a) Brother-in-law (b) Brother
 (c) Cousin (d) None of these
125. If '+' means '-', '-' means '×', '×' means '÷' and '÷' means '+', then what would be the answer of the equation?
 $15 \times 5 \div 10 + 5 - 3 = ?$
 (a) 9.5 (b) 0
 (c) -2 (d) 24

Solutions

MATHEMATICS

- (d) We get the greatest 8-digits number with given digits 5, 8, 7, 5, 2, 0, 6 and 1
 $= 87655210$.
- (c) 52806, 52086, 52860, 52800 and 58260 are given numbers.
 After arranging ascending order we get,
 $52086 < 52800 < 52806 < 52860 < 58260$
- (c) Sum of 234251 and 352421 = 586672
 $925564 - 586672 = 338892$
 Hence, 338892 that must be subtracted from 925564 make it equal to the sum of 234251 and 352421.
- (b) When we multiplied the numbers we get,
 $10101 \times 25 = 252525$
- (c) According to the question,
 Total age of 3 sisters = $3 \times 15 = 45$ years
 Sum of two sisters = $12 + 15 = 27$ years
 \therefore Age of the third sister = $45 - 27 = 18$ years.
- (c) According to the question,
 No. of days in leap year = 366 days.
 $\frac{7}{6} \times 366 \text{ days} = 7 \times 61 \text{ days} = 427 \text{ days}$
 $= \frac{427}{7} \text{ week} = 61 \text{ week}.$

$$\begin{array}{r}
 10101 \\
 \times 25 \\
 \hline
 50505 \\
 20202 \\
 \hline
 252525
 \end{array}$$

7. (b) The value of Roman numerals CDXLIX in Arabic numerals,
 $= 400 + 40 + 9 = 449$.
8. (d) After solving we get,
 $(700 \div 10) - \{(12 \times 8) \div (34 - 10)\}$
 $= 70 - \{96 \div 24\} = 70 - 4 = 66$.
9. (a) When we put percentage we get,
 $2 = 200\%$
 $\left[\because 200\% = \frac{200}{100} = 2 \right]$
10. (a) According to the question,
 C.P. = ₹ 3000
 S.P. = ₹ 2700
 Loss = $3000 - 2700 = ₹ 300$
 Loss % = $\frac{300}{3000} \times 100 = 10\%$.
11. (c) According to the question,
 Duration of the Journey
 $= 12 \text{ hrs} + 6.15 \text{ hrs} = 18 \text{ hrs } 15 \text{ min}$
12. (b) Given, C.P. = ₹ 1,39,500
 According to the question,
 S.P. = ₹ 75,000 + ₹ 80,000
 $= ₹ 1,55,000$
 We get,
 Gain = ₹ 1,55,000 - ₹ 1,39,500
 $= ₹ 15,500$.
13. (a) Required no. of bulbs
 $= 85 \times 48 \times 64$
 $= 4080 \times 64 = 261120$
14. (b)
15. (d) According to the question,
 $38 - 8 = 30$ and $68 - 8 = 60$
 HCF of 30 and 60 = 30
 Hence, the required number = 30.
16. (c) After converting in decimal notation we get,
 $10 \text{ kg} + 2 \text{ dag} + 6 \text{ g}$
 $= \left(10 + \frac{2}{100} + \frac{6}{1000} \right) \text{ kg} = 10.026 \text{ kg}$.
17. (b)
18. (c) According to the question,
 Perimeter of rectangle
 $= 2(l + b) = 2(10 + 8) = 36 \text{ cm}$.
 Now, perimeter of rectangle = Perimeter of square
 $\therefore \text{Side of square} = \frac{36}{4} = 9 \text{ cm}$
 Area of the square = $9 \times 9 = 81 \text{ cm}^2$.
19. (d) Sum of three angles of a triangle = 180°
 We have to check by the option.
 (a) $52^\circ + 69^\circ + 79^\circ = 200^\circ$
 (b) $30^\circ + 69^\circ + 71^\circ = 170^\circ$
 (c) $132^\circ + 169^\circ + 59^\circ = 360^\circ$
 (d) $32^\circ + 69^\circ + 79^\circ = 180^\circ$.
 Hence, option (d) is correct.
20. (b)
21. (a) The fraction to 1.25 is,
 $1.25 = \frac{125}{100} = \frac{5}{4} = 1\frac{1}{4}$.
22. (a) Sum of two numbers = 11009
 One number = 9999
 $\therefore \text{Other number} = 11009$
 $\begin{array}{r} 11009 \\ - 9999 \\ \hline 1010 \end{array}$
 Hence, other number = 1010.
23. (c) After simplifying we get,
 $6 \div 6 + 6 \times 6 - 6$
 $= 1 + 36 - 6 = 37 - 6 = 31$.
24. (a) After simplifying we get,
 $1\frac{1}{24} - 1 + \frac{7}{36}$
 $\Rightarrow \frac{25}{24} - 1 + \frac{7}{36}$
 $= \frac{75 - 72 + 14}{72} = \frac{17}{72}$.
25. (c) Total amount of lemonade Sara poured in 5 glasses
 $= 1\frac{1}{8} \times 5 = \frac{9}{8} \times 5$
 $= \frac{45}{8} = 5\frac{5}{8} \text{ Cups}$.
26. (a) Required rice in each bag = $\frac{1}{4} \div 7$
 Fraction of rice = $\frac{1}{4} \times \frac{1}{7} = \frac{1}{28}$.
27. (a) After solving we get
 $1 + 0 + \frac{9}{100} + \frac{3}{1000} = 1.093$.
28. (c)

29. (a) The sum is:

$$\begin{array}{r} 20.088 \\ 20.08 \\ 20.008 \\ 20.888 \\ \hline 81.064 \end{array}$$
Hence, required sum = 81.064.
30. (a) Round off 37504 to the nearest hundreds = 37500
31. (d) \therefore According to the question,

$$\text{Speed} = \frac{\text{Distance}}{\text{Time}}$$

$$\therefore \text{Time} = \frac{\text{Distance}}{\text{Speed}} = \frac{350}{75} = \frac{14}{3} \text{ hrs.}$$

$$= 4\frac{2}{3} \text{ hrs} = 4 \text{ hrs } 40 \text{ minutes.}$$
32. (d) Number of rectangular pieces

$$= \frac{\text{Volume of cube}}{\text{Volume of rectangular pieces}}$$

$$= \frac{a^3}{l \times b \times h}$$

$$= \frac{400 \times 400 \times 400}{20 \times 10 \times 5}$$

$$= \frac{64000000}{1000} = 64000.$$
33. (b) Given, P = ₹ 500
A = ₹ 600
S.I. = A - P = 600 - 500 = ₹ 100.

$$\text{Time} = \frac{\text{S.I.} \times 100}{P \times r}$$

$$= \frac{100 \times 100}{500 \times 5} = 4 \text{ years}$$
34. (a) Total numbers of 4 numbers
 $= 4 \times 30 = 120$
Sum of first-three numbers = 85
 \therefore The fourth number = $120 - 85 = 35$
35. (a) According to the question,
Let $x\%$ of 10000 m = 10 m

$$\Rightarrow \frac{x}{100} \times 10000 = 10$$

$$\Rightarrow 100x = 10$$

$$\Rightarrow x = \frac{10}{100} = \frac{1}{10} \% = 0.1\%.$$
36. (a) Number of square tiles
Area of square = a^2
The no. of square-tile

$$= \frac{360 \times 450}{15 \times 25} = 720.$$
37. (a) The smallest odd number formed by using the digits 1, 2, 3, 4 and 5 = 12345.
38. (c) Check by the option.
(a) $\frac{1}{3}, \frac{1}{2}, \frac{25}{100} \Rightarrow \frac{1}{3}, \frac{1}{2}, \frac{1}{4}$
are not in ascending order
(b) $\frac{1}{4}, \frac{1}{2}, \frac{1}{3}$ are not in ascending order
(c) $\frac{1}{4}, \frac{1}{3}, \frac{1}{2}$ are in ascending order
(d) $\frac{1}{2}, \frac{1}{3}, \frac{1}{4}$ are not in ascending order.
Hence, option (c) is correct.
39. (d) According to the question,

$$18 \text{ km/hr} = 18 \times \frac{5}{18} \text{ m/s} = 5 \text{ m/s}$$
Hence, the speed of boat = 5 m/s
40. (b) According to the question,

$$C = \frac{5}{9}(F - 32)$$

$$= \frac{5}{9}(200 - 32)$$

$$= \frac{5}{9} \times 168 = \frac{5}{3} \times 56$$

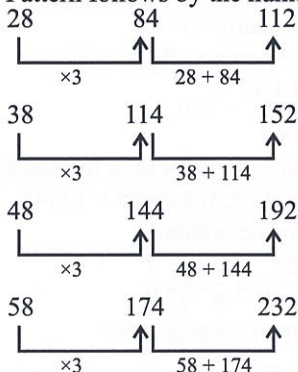
$$= \frac{280}{3} = 93.3^\circ\text{C}$$
Hence, the value of 200°F in degree Celsius = 93.3°C .
41. (a) Difference by interchanging the places of 6 and 9

$$\begin{array}{r} 39460 \\ -36490 \\ \hline 2970 \end{array}$$
42. (c) After converting into decimal we get,

$$\frac{375}{100} \times \frac{5}{100} + \frac{725}{100} \times \frac{10}{100}$$

$$= \frac{1875}{10000} + \frac{7250}{10000} = \frac{9125}{10000} = 0.9125$$

43. (a) Pattern follows by the numbers,



Hence, the next row of numbers is 58, 174 and 232.

44. (c) According to the question,
-
- perimeter of rectangular field
-
- $= 2(l + b) = 2(40 + 25) = 130$
- m

In 1 round distance = 130 m

In 4 round distance = 130×4 m = 520 m.

45. (d) According to the question,
-
- Area of the room =
- $l \times b$
-
- $= 1500 \times 1000 \text{ cm}^2 = 1500000 \text{ m}^2$
-
- Cost of
- $1 \text{ cm}^2 = ₹ 2$
-
- Cost of
- 1500000 cm^2
-
- $= ₹ 3000000$

\therefore Cost of carpeting its floor = 3000000

46. (d) Cost of 15 balls = ₹ 300

$$\text{Cost of 1 ball} = ₹ \frac{300}{15} = ₹ 20$$

$$\text{Cost of 12 shuttle} = ₹ 96$$

$$\text{Cost of 1 shuttle} = ₹ \frac{96}{12} = ₹ 8$$

\therefore Cost of 1 ball and 1 shuttle shopkeeper would pay = ₹ 20 + ₹ 8 = ₹ 28

47. (b) We know,
-
- HCF
- \times
- LCM = 1st no.
- \times
- 2nd no.
-
- $312 \times \text{LCM} = 624 \times 936$

$$\therefore \text{LCM} = \frac{624 \times 936}{312} = 2 \times 936 = 1872.$$

Hence, required smallest number = 1872.

48. (c) According to the question,
-
- Total C.P. = ₹ 450 + ₹ 50 = ₹ 500

$$\text{Total S.P.} = ₹ 600$$

$$\text{Profit} = \text{S.P.} - \text{C.P.} = 600 - 500 = ₹ 100$$

$$\text{Profit \%} = \frac{\text{Profit}}{\text{CP}} \times 100$$

$$= \frac{100}{500} \times 100 = 20\%.$$

49. (c) Area of the given figure

$$= 10 \times 6 - 4 \times 2 - 4 \times 2$$

$$= 60 - 16 = 44 \text{ cm}^2.$$

50. (b) According to the question,

let total time spent by Amar in study = x hrs.

$$\text{Time spent on Science} = \frac{3x}{8}$$

$$\text{Time spent on English} = \frac{3x}{8} \times \frac{2}{5} = \frac{3x}{20}$$

Hence, $\frac{3}{20}$ of Amar's study time was spent studying English.

GENERAL KNOWLEDGE

51. (a) Coconut is mostly hollow in the inside. It has something to do with the buoyancy force which is higher when the object on water is empty inside. Buoyancy is higher than the weight of the object thus it floats.
52. (b) A communicable disease spreads through the direct contact with an infected individual or when a healthy person comes in contact with the body fluids or with indirect contact involving vector. Beriberi is a disorder that can occur when a person has a lack of thiamine, or vitamin B-1.
53. (c) Rabies virus is transmitted through direct contact (such as through broken skin or mucous membranes in the eyes, nose, or mouth) with saliva from an infected animal as - Cats, cattle, and dogs.
54. (c) Milk turning sour is a chemical change as the lactose in the milk is converted to lactic acid by microbes, giving it a sour taste.
55. (c) Wearing out and carrying away of the withered particles of the top soil by natural forces like the sun, wind and running water is called soil erosion.
56. (c) Other characteristics of dolphins that make them mammals rather than fish are that they give birth to live young rather than laying eggs and they feed their young with milk. Whales and porpoises are also mammals.
57. (d) The purpose of the brain and nervous system is to control, coordinate, and to adapt the body to its environment. This is why it is

- called the master control system.
58. (d) Syncope is a temporary loss of consciousness usually related to insufficient blood flow to the brain. It's also called fainting or "passing out." It most often occurs when blood pressure is too low (hypotension) and the heart doesn't pump enough oxygen to the brain.
 59. (a) Buoyancy or upthrust, is an upward force exerted by a fluid that opposes the weight of a partially or fully immersed object.
 60. (b) Aryabhata, first unmanned Earth satellite built by India. It was named for a prominent Indian astronomer and mathematician of the 5th century CE. The satellite was assembled at Peenya, near Bangalore, but was launched from within the Soviet Union by a Russian-made rocket on April 19, 1975.
 61. (b) Seismologists are Earth scientists, specialized in geophysics, who study the genesis and the propagation of seismic waves in geological materials.
 62. (b) Carbon dioxide, methane, water vapour, nitrous oxide, CFCs and ozone are greenhouse gases. Carbon monoxide, CO is not a greenhouse gas.
 63. (c) A globe is a special model of the earth and it represents the earth a three-dimensional form and is somewhat similar to maps, but does not distort the areas and it shows the subject in great detail.
 64. (c)
 65. (d) Weather is defined as the state of the atmosphere at a given time and place, with respect to variables such as temperature, moisture, wind speed and direction, and barometric pressure.
 66. (b) River Congo is Known as Highway of central Africa because entire river is readily navigable. Much of the trade of central Africa passes through it. Where there are no railways or roads river Congo act as a life line.
 67. (b)
 68. (d) Humans have a hearing threshold of around 0 decibels. Above this threshold, sounds with higher sound pressure levels are heard as louder noises. Sounds above 90 dB can lead to chronic hearing damage if people are exposed to them every day or all the time.
 69. (d) In 1877, Sir Syed founded the Muhammadan Anglo Oriental College in Aligarh and patterned the college after Oxford and Cambridge universities that he had visited on a trip to England. His objective was to build a college in tune with the British education system but without compromising its Islamic values.
 70. (d) The policy of divide and rule was the 1905 partition of Bengal which sought to suppress the spirit of the progressive intellectuals of Bengal. The British rulers tried to destroy Bengal's integration through its partition by separating the largely Muslim eastern areas from the largely Hindu western areas to undermine people's unity.
 71. (d) The Purna Swaraj means complete independence of India. It was promulgated by the Indian National Congress on 26 January 1930, resolving the Congress and Indian nationalists to fight for Purna Swaraj of the British Empire.
 72. (b) Article 81 of the Constitution of India 1949 has specified maximum strength of members of parliament in the Lok Sabha to be 552. The number of members of parliament is distributed among the States in such a way that the ratio between the number of seats allotted to each State and the population of the State is, so far as practicable, the same for all States.
 73. (d) The League of Nations was a international organization founded after the Paris Peace Conference, 1919. The League's goals included disarmament, preventing war through collective security, settling disputes between countries through negotiation diplomacy and improving global welfare.
 74. (c) Today countries and communities around the world are becoming more connected. Technology and new transport options contribute to the accessibility of different locations, and are helping our world become smaller. Another country can only be a few hours away on a plane.
 75. (c) Internet is the transport vehicle for the information stored in files or documents on another computer. It carries together various information and services, such as electronic mail, online chat, file transfer, and the interlinked Web pages and other documents of the World Wide Web. Thus we find study material on any topic.

LANGUAGE

- | | | | | |
|---------|---------|---------|---------|----------|
| 76. (d) | 77. (c) | 78. (a) | 79. (d) | 80. (a) |
| 81. (d) | 82. (c) | 83. (a) | 84. (a) | 85. (c) |
| 86. (c) | 87. (a) | 88. (c) | 89. (b) | 90. (a) |
| 91. (a) | 92. (b) | 93. (d) | 94. (a) | 95. (d) |
| 96. (c) | 97. (a) | 98. (b) | 99. (b) | 100. (c) |

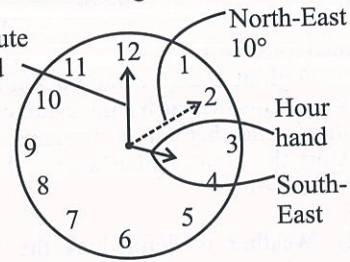
INTELLIGENCE TEST

101. (b) Pattern follows by the series,
 $20, 30, 42, ?$
 $20 + 10 = 30$
 $30 + 12 = 42$
 $42 + 14 = 56$
102. (a) When we get victory we feel joy, in the same manner, when we get defeat we feel sorrow.
103. (b) The missing number is
 $(13)^2 = 169$
 $(17)^2 = 289$
104. (c) As,

T	R	A	I	N
+3	+3	+3	+3	+3
W	U	D	L	Q

Similarly

B	U	S
+3	+3	+3
E	X	V
105. (a) As water of a 'River' flows similarly water of 'Pool' is stagnant.
106. (c) Except Bridge are used for up and down movement.
107. (a) After arranging alphabetical order we get,
(1) Plain (2) Plane ($\sqrt{}$)
(3) Player (4) Plenty
Hence, plane would come at second place.
108. (c)
109. (d) Scarf is least like the other word as scarf is a thing and all other are the part of a body.
110. (c) 2, 3, 5, 7, 11, 13 are prime numbers.
Hence, next prime number is 17.
111. (a)
112. (b) Pattern follows by the series :
 $5 + 6 = 11$ $11 + 8 = 19$
 $19 + 10 = 29$ $29 + 12 = 41$
 $41 + 14 = 55$.
113. (c) Gills are the respiratory organ of the fish and in the same way. Lungs are the respiratory organ of man.
114. (a)
115. (d) Stars, Sun, Planets are formed naturally by the universe but satellites is an artificial object being introduced by the human being.
116. (b)
117. (d) According to the question,
 $S > P > O$, only $S > T$, $P > R > Q$
We have no proper information.
So, we cannot be said anything about the shortest one.
118. (c) $16 \div 8 \times 6 - 2 + 12 = ?$
After interchanging the sign. We get,
 $16 + 8 - 6 \times 2 \div 12$
 $= 16 + 8 - 6 \times 2 \times \frac{1}{12}$
 $= 16 + 8 - 1$
 $= 24 - 1 = 23$.
119. (c)
120. (c) Rabbits is usually transmitted through dogs in the same way Malaria is usually transmitted through Mosquito.
121. (d) Minute hand



Hence, hour hand will point towards south-east.

122. (c) The opposite emotion of love is hate in the same way the opposite of friend is enemy.

123. (b)

124. (a) $Y - X - A + B$
 $(+) (+)$

Hence, Y is Brother-in-law of B.

125. (c) $15 \times 5 \div 10 + 5 - 3 = ?$
After interchanging the sign. We get,
 $= 15 \div 5 + 10 - 5 \times 3$
 $= 15 \times \frac{1}{5} + 10 - 5 \times 3$
 $= 3 + 10 - 15 = 13 - 15 = -2$.

Sainik School Entrance Exam Solved Paper-2017

(Class-VI)

INTELLIGENCE TEST

Directions (Qs. 1 to 6) : In each of the following series determine the order of the letters/ numbers. Then from the given options select the one which will complete the given series.

1. B D G K ? V
 (a) N (b) P
 (c) Q (d) M
2. dfe, jih, mln, ?, vut
 (a) oqp (b) psr
 (c) prq (d) rsp
3. QPO, SRQ, UTS, WVU, (?)
 (a) XVZ (b) ZYA
 (c) YXW (d) VWX
4. 4, 9, 19, 34, 54, ?, 109
 (a) 89 (b) 84
 (c) 74 (d) 79
5. 7776, 1296, 216, 36, 6, ?
 (a) 6 (b) 0
 (c) 3 (d) 1
6. 3, 15, 90, 630, 5040, ?
 (a) 35280 (b) 40320
 (c) 45360 (d) 10080

Directions (Qs. 7 and 8) : In the following questions select the right option which indicates the correct code for the word or letter given in the question.

7. If BAD is coded as 7, HIS as 9, LOW will be coded as :
 (a) 50 (b) 8
 (c) 23 (d) 5
8. In a certain code LIBERATE is written as 56403170, TRIBAL will be written in the same code as :
 (a) 734615 (b) 736415
 (c) 136475 (d) 034615

9. Reena walked from A and B in the East 10 feet. Then she turned to the right and walked 3 feet. Again she turned to the right and walked 14 feet. How far is she from A?
 (a) 4 feet (b) 5 feet
 (c) 24 feet (d) 27 feet
10. Amit started walking positioning his back towards the sun. After some time, he turned left, then turned right and towards the left again. In which direction is he going now?
 (a) North or South (b) East or West
 (c) North or West (d) South or West
11. Pointing to a man, a lady said, "His brother's father is my grandfather's only son". How is the lady related to the man?
 (a) Mother (b) Sister
 (c) Daughter (d) Aunt
12. Vidya is the wife of Gopi and Gopi is the brother of Akhil. Akhil is the uncle of Vijay. What is Vijay's relation with Vidya?
 (a) Son (b) Nephew
 (c) Brother-in-law (d) Brother

Directions (Qs. 13 to 17) : In the questions given below one term is missing. Based on the relationship of the two given words/ letters/ numbers find the missing term from the given options.

13. ACE : FGH :: LNP : ?
 (a) QRS (b) PQR
 (c) QST (d) MOQ
14. EIGHTY : GIEYTH :: OUTPUT : ?
 (a) UTOPTU (b) UOTUPT
 (c) TUOUTP (d) TUOTUP
15. 23 : 53 :: 8 : ?
 (a) 66 (b) 57
 (c) 27 (d) 19
16. PEARL : NECKLACE :: FLOWER : ?
 (a) Plant (b) Garden
 (c) Petal (d) Bouquet

17. ALPHABET : WORD :: WORD : ?

- (a) Sound (b) Music
(c) Sentence (d) Dictionary

Directions (Qs. 18 to 24) : In each of the following questions, there are four options. Three options are alike in certain manner. Only one option does not fit in. Choose the one which is different from the rest.

18. (a) 18 (b) 12
(c) 30 (d) 20
19. (a) 336 (b) 213
(c) 436 (d) 819
20. (a) 28751 (b) 52638
(c) 85362 (d) 63852
21. (a) AEHJ (b) EIJK
(c) DHKM (d) CGJL
22. (a) Rabbit (b) Crocodile
(c) Earthworm (d) Snail
23. (a) Tree (b) Leaf
(c) Bush (d) Herb
24. (a) Doctor (b) Teacher
(c) Engineer (d) Diver
25. How many 7's are there in the following series which are preceded by 6 which is not preceded by 8 ?
8 7 6 7 8 6 7 5 6 7 9 8 6 1 6 7 7 6 8 8 6 9 7 6 8 7
(a) 2 (b) 3
(c) 4 (d) Only 1
26. If "+" means "÷", "×" means "−", "÷" means "×" and "−" means "+", what will be the value of the following expression?
 $9 + 3 \div 4 - 8 \times 2 = ?$

- (a) $6\frac{3}{4}$ (b) $-1\frac{3}{4}$
(c) $-6\frac{1}{4}$ (d) 18

27. If "−" means "÷", "+" means "×", "÷" means "−" and "×" means "+", then which of the following must be true?

- (a) $1 \div 2 + 3 \times 6 - 8 = 12$
(b) $2 + 3 - 5 \times 8 \div 4 = 7$
(c) $5 + 6 \times 8 - 2 \div 3 = 31$
(d) $6 \div 1 + 2 - 8 \times 4 = 31$

28. If Thursday was the day after the day before yesterday five days ago, what is the least number of days ago when Sunday was three days before the day after tomorrow?

- (a) Two days ago (b) Three days ago
(c) Four days ago (d) Five days ago
29. If the fifth day of a month is Friday, which of the following will be the Seventh day from 10th of that month?
(a) Tuesday (b) Monday
(c) Wednesday (d) Thursday
30. In a certain language 'mu mit es' means 'who is she' and 'elb mu es' means 'where is she'. What is the code for 'where' in this language?
(a) es (b) elb
(c) mu (d) mit
31. In a certain code language '069' means 'grapes are sweet', '476' means 'very sweet fruit' and '509' means 'grapes are ripe'. Which of the following digits means 'ripe' in that language?
(a) 0 (b) 5
(c) 9 (d) 7
32. If the odd numbers between 20 to 40 are arranged in a row, what will be the 6th number from the right?
(a) 27 (b) 31
(c) 33 (d) 29

Directions (Qs. 33-35) : In each of the following questions, three out of four alternatives contain alphabet placed in a particular form. Find the one that does not belong to the group.

33. (a) PEAR (b) TORE
(c) REAP (d) TEAR
34. (a) QePFoLA (b) OrDFkV
(c) TuMBiN (d) XZaWoB
35. (a) KQ14 (b) AY13
(c) MR11 (d) GW15

Directions (Qs. 36-40) : There are two sets of figure given. There is a definite relationship between first two. Establish a similar relationship between third and fourth by selecting a suitable figure from answer that would replace the question mark.

36. Question Figures

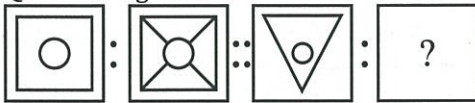


Answer Figures

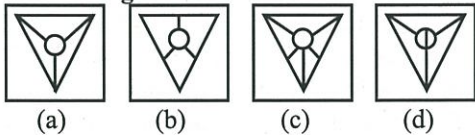


- (a) (b) (c) (d)

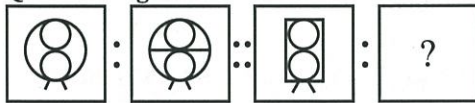
37. Question Figures



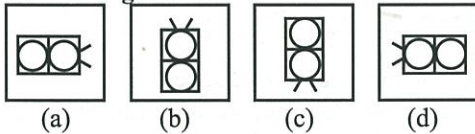
Answer Figures



38. Question Figures



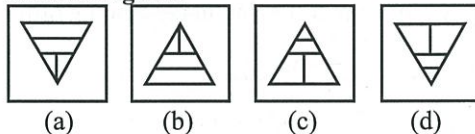
Answer Figures



39. Question Figures



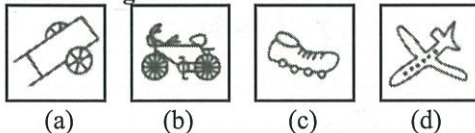
Answer Figures



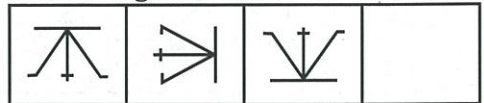
40. Question Figures



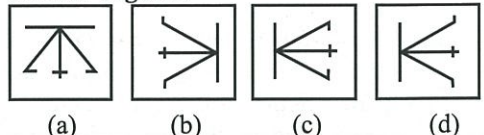
Answer Figures



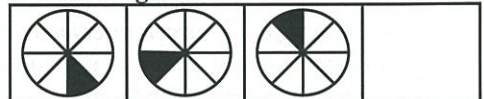
41. Problem Figures



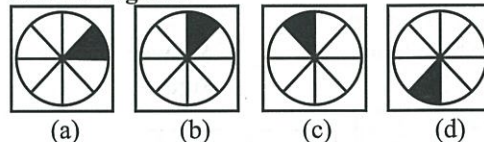
Answer Figures



42. Problem Figures



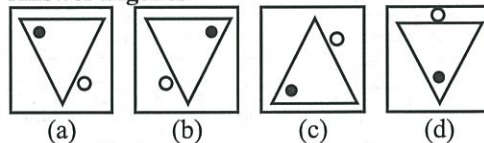
Answer Figures



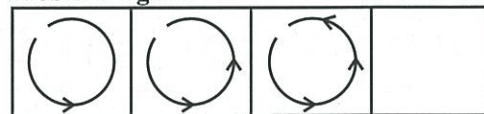
43. Problem Figures



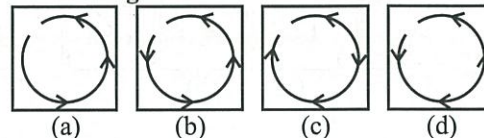
Answer Figures



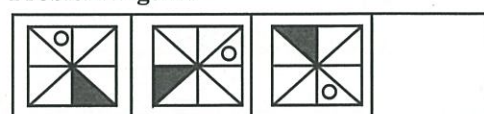
44. Problem Figures



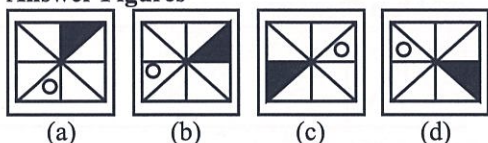
Answer Figures



45. Problem Figures



Directions (Qs. 41-45) : In each of the following questions, there are three figures and the space for the fourth figure is left blank. The problem figures are in a series. Find out one figure from among the answer figures which occupies the blank space for the fourth figure and completes the series. Indicate your answer in the answer sheet.

Answer Figures

Directions (Qs. 46-50) : There is a problem figure on the left-hand side, a part of which is missing. Observe the answer figures (a), (b), (c) and (d) on the right-hand side and find out the answer figure which, without changing the direction, fits in the missing part of the problem figure in order to complete the pattern in the problem figure. Indicate your answer by letter of the answer figure chosen by you in the box against the number corresponding to the questions in the answer sheet.

	Problem Figure	Answer Figure
46.		
47.		
48.		
49.		
50.		

MATHEMATICS**Section-I**

(Each question carries two marks.)

- Form the smallest and greatest 6-digit numerals by repeating any 2 digits from 7, 9, 5, 4.
- Find the square root of 7921.

- If a man can do a work in 32 days, in how many days will 24 men complete the same work?
- Find the simple interest, if $P = ₹ 400$, $R = 3.65\%$ per annum and time = 150 days.
- Round 48,540 and 23,467 to the nearest 1000 and find the difference.
- Express 804.291 kg as decagrams.
- Find the smallest number which when divided by 12 and 20 leaves no remainder.
- Sonali and Priya are classmates. Sonali completed her homework in $\frac{5}{6}$ of an hour and Priya in $\frac{3}{4}$ of an hour. Who was faster?
- Simplify $6\frac{3}{10} - 2\frac{3}{4} - 1\frac{2}{5}$
- Two angles of a quadrilateral are each 90° and remaining two angles are such that one is 3 times to other. Find these two angles.

Section-II

(Each question carries three marks.)

- Find the ratio of 90 cm to 1.5 m.
- Arrange the following in descending order : $\frac{3}{7}$, $\frac{3}{11}$, $\frac{3}{5}$, $\frac{3}{2}$ and $\frac{3}{17}$.
- The number of girl students in each class of a co-educational middle school is depicted by the pictograph:

Classes Number of girl students - 4 Girls

I		
II		
III		
IV		
V		
VI		
VII		
VIII		

Observe this pictograph and answer the following questions :

- Which class has the maximum number of girl students?

- (b) Is the number of girls in Class V less than the number of girls in Class III?
- (c) How many girls are there in Class VII?
14. Akhilesh runs a coffee shop and sells 51 cups of coffee in 6 hours. If this is three-fourths of the total number of cups he sells in the whole day, find out the number of cups he sells in a day.
15. Simplify : $4\frac{6}{8} - \left\{ 3\frac{1}{3} + \left(2\frac{1}{2} - 1\frac{1}{4} \right) \right\}$.
16. Find the greatest number which divides 149 and 101 leaving remainder 5 in each case.
17. Mrs. Singhal deposited ₹ 10,000 in a Post Office Saving at an interest of 3% per annum. How much amount will she receive at the end of 4th month?
18. Suppose your watch gains 4 seconds every 8 hours. How many seconds will it gain in a week?
19. A fruit seller had 2,00,000 apples. He packed them in boxes. Each box contains 176 apples. How many boxes were used and how many apples were left over?
20. Find the average of all prime numbers between 60 and 80.
25. Divide rupees 4000 among A, B, C, so that their shares may be in the ratio of 5 : 7 : 8.
26. Find the number of cubical boxes of cubical side 3 cm which can be accommodated in a carton of dimension 15 cm × 9 cm × 12 cm?
27. Fill in the blanks :
 (a) There are only symbols in Roman numerals.
 (b) The predecessor of the smallest 8 digit number is
 (c) $\frac{4}{7}X \dots\dots\dots = 84$
 (d) Length of a Rectangle = $\frac{?}{\text{Breadth}}$
 (e) is the smallest prime number.
28. A crockery dealer ordered for 50 pieces of China tea sets for ₹ 18,000. When the goods arrived, he found that two tea sets were damaged. At what price per set should he sell the remaining tea sets to earn a total profit of ₹ 1200?
29. Vina's father baked a rectangular cake. In the evening $\frac{5}{6}$ of the cake was left. Vina ate half of it. What fraction of the cake did Vina eat?
30. (a) The product of two numbers is 2925. If LCM is 195, find HCF.
 (b) Sohan bought rice at ₹ 4800.75 per quintal. Due to a fall in prices he could sell it as ₹ 4600.75 per quintal only. Find his total loss if he has bought 13.5 quintals rice.

Section-III

(Each question carries five marks.)

21. Bob wants to cover the floor of a room 3 m wide and 4 m long by squared tiles. If each square tile is of side 0.5 m, then find the number of tiles required to cover the floor of the room.
22. Name the types of following triangles :
 (a) Triangle with lengths of sides 7 cm, 8 cm and 9 cm.
 (b) $\triangle ABC$ with $AB = 8.7$ cm, $AC = 7$ cm and $BC = 6$ cm.
 (c) $\triangle PQR$ such that $PQ = QR = PR = 5$ cm.
 (d) $\triangle DEF$ with $m\angle D = 90^\circ$.
 (e) $\triangle XYZ$ with $m\angle Y = 90^\circ$ and $XY = YZ$.
23. Find the smallest 4 digit number such that when it is divided by 12, 18, 21 and 28, it leaves remainder 3 in each case.
24. How much time will a 171 m long train take to cross 229 m long bridge, if it is running at a speed of 45 km/h?

LANGUAGE

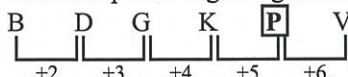
1. Write 15 sentences on any **one** of the following topics : (15)
 Importance of Cleanliness or A Journey by Bus.
2. Read the following passage carefully and answer the questions that follow : (15)
 The Sahara Desert covers large parts of Africa. The desert is covered with sand dunes or sand seas. The desert also has several deeply dissected mountains and mountain ranges along with many volcanic mountains. Most of the rivers and streams that are found in Sahara are seasonal or intermittent, except the Nile river, which crosses the desert from its origins

- in central Africa to empty into Mediterranean. The central part of the Sahara is very dry, with little vegetation. The northern and southern reaches of the desert, along with the highlands, have areas of sparse grasslands and desert shrub, with trees and taller shrubs at places where moisture collects.
- (a) What is the meaning of word "seasonal"?
- (b) "The desert is covered by sand dunes or sand seas". What is the meaning of sand sea in the paragraph?
- (c) "The central part of Sahara is very dry, with little vegetation". What does it mean?
- (d) Give the meaning of "sparse".
- (e) What is the meaning of vegetation in paragraph?
3. Make your own sentences using the underlined words in the following paragraph. ($5 \times 2 = 10$)
Do you **support** a football or hockey team? Perhaps you follow the **success** of your national cricket team. You know every game has its own importance and follows its own **discipline**. To become a good player of any game you need to have **regular** practice of that game. Learning basic skills of the game is very **essential**.
- (a)
- (b)
- (c)
- (d)
- (e)
4. Form meaningful sentences by rearranging the words in proper order: ($5 \times 2 = 10$)
- (a) crying/ she had/ as/ lost her/ Manju was/ pencil.
- (b) at that hospital/ Anil said that/ was a doctor/ his father
- (c) environmental/ of every body/ protection/ is responsibility/ the
- (d) the/ knocking/ who/ at/ door/ is
- (e) early to bed/ good habit/ and early to rise/ is a
5. Give one word for the following : ($5 \times 1 = 5$)
- (a) A person who carries our luggage
.....
- (b) A person who spends money extravagantly
.....
- (c) Young one of a horse
.....
- (d) Happening once in two years
.....
- (e) One who makes wooden furniture
.....
6. Choose the correct word given in the brackets and fill in the blanks : ($5 \times 2 = 10$)
- (a) Cleanliness is next to
(God, Goddess, Godliness)
- (b) My father tells me to daily.
(Play, played, playing)
- (c) Yesterday, a cyclone a small town near the beach. (hit/ has hit)
- (d) I like blue candle the best.
(a, an, the)
- (e) There is eucalyptus tree beside the house. (a, an, the)
7. Use the given word in separate sentences of your own to show the difference in the meaning of the words of the pair given below : ($5 \times 2 = 10$)
- (a) Early, Yearly (b) Greatness, Grateful
- (c) Pray, Prey (d) Break, Brake
- (e) Lose, Loose
8. Give the Antonym (opposite) of the following words: ($5 \times 1 = 5$)
- (a) Risky (b) Doubtful
- (c) Negligent (d) Deep
- (e) Differ
9. Change each of the following as directed: ($5 \times 2 = 10$)
- (a) The news is too good to be true.
(Remove "too")
.....
- (b) She is your mother.
(Change into interrogative)
.....
- (c) Fire destroyed the town.
(Change the Voice)
.....
- (d) He said, 'I am very thirsty'
(Change into indirect speech)
.....
- (e) Raju is not as bad as Gaurav.
(Rewrite using comparative form of "good")
.....
10. Imagine your name is Akash and you live at House No. 23, Dr. Kalam Road, Jayanagar, Bangalore. Your sister, Deepika who lives at Shanti Nivas, Linking Road, Mumbai, has sent you a Rakhi on Rakshabandhan. Write a letter to thanks to her. (10)

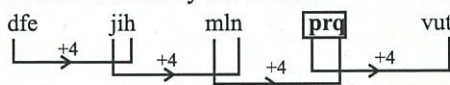
Solutions

INTELLIGENCE TEST

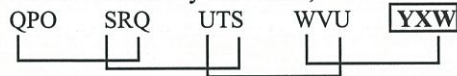
1. (b) The difference between the letters increases at each step after beginning with two.



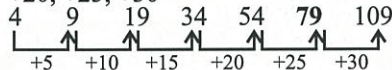
2. (c) Pattern follows by the series is +4 +4 +4 ...



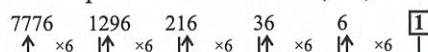
3. (c) Pattern follows by the series,



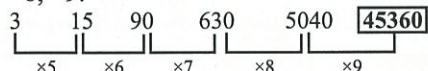
4. (d) The sequence in the series is +5, +10, +15, +20, +25, +30



5. (d) The sequence in the series $\times 6, \times 6, \times 6, \dots$



6. (c) The sequence in the series is $\times 5, \times 6, \times 7, \times 8, \times 9$.



7. (d) The coded number is the sum of number digits signifying the position of the alphabet in the natural order.

As,

B A D
 ↓ ↓ ↓
 2nd 1st 4th

i.e., $2 + 1 + 4 = 7$

Similarly,

H I S
 ↓ ↓ ↓
 8th 9th 19th

i.e., $8 + 9 + 19 = 36$, further $3 + 6 = 9$

Also,

L O W
 ↓ ↓ ↓
 12th 15th 23rd

i.e., $12 + 15 + 23 = 50$, further, $5 + 0 = 5$.

8. (b) The letters of the word TRIBAL are picked from LIBERATE. So will be the coded numbers.

As,

LIBERATE \rightarrow given word

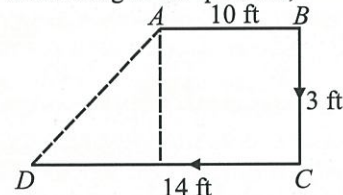
5 6 4 0 3 1 7 0 \rightarrow codes

Similarly,

TRIBAL \rightarrow word to be coded

7 3 6 4 1 5 \rightarrow answer codes

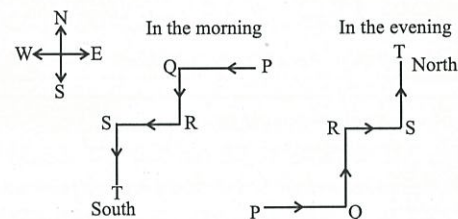
9. (b) According to the question,



$= \sqrt{3^2 + (14 - 10)^2}$

$= \sqrt{9 + 16} = \sqrt{25} = 5 \text{ ft.}$

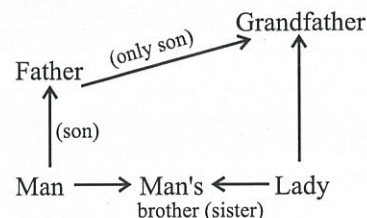
10. (a)



If he start walking in the morning then finally he will face toward south and if he starts in the evening then finally he will face towards North.

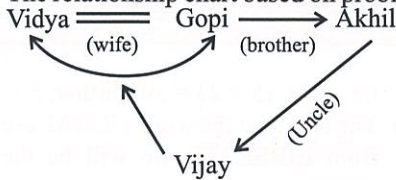
Hence our answer is North or South.

11. (b)



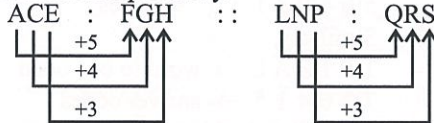
Man's brother's father is also the lady's father as he is the only son of lady's grandfather. So, the lady is man's sister.

12. (b) The relationship chart based on problem is:



Hence, Vijay is the Vidya's nephew.

13. (a) The three letters are moved 5, 4 and 3 steps forward respectively.



14. (d) The word is divided into two sections and the letters are written backwards.

EIGHTY : GIEYTH :: OUTPUT : TUOTUP

15. (d) We get the pattern here, all the numbers are prime numbers.

16. (d) As, necklace is made from Pearl similarly, bouquet is made from flower.

17. (c) As words are made from alphabet, in the same way sentence is made from the words.

18. (a) The other numbers are $3^2 + 3 = 12$, $5^2 + 5 = 30$, $4^2 + 4 = 20$, $6^2 + 6 = 42$.

19. (c) In all other numbers the digit on the right is the sum of two digits on the left.

20. (a) 28751 is an odd number.

21. (b) In all other groups, there is a gap of 3 letters between first and second, 2 letters between second and third and 1 letter between third and fourth.

22. (a) All others are crawling animals.

23. (b) All other are types of vegetation.

24. (d)

25. (b) $\overline{8767} \overline{867} \overline{567} \overline{986} \overline{167} \overline{7688} \overline{697} \overline{687}$

There are 3 7's.

26. (d) After interchanging the signs, we get $9 \div 3 \times 4 + 8 - 2 = 12 + 8 - 2 = 18$

27. (c)

$$(a) 1 - 2 \times 3 + 6 \div 8 = 12$$

$$\frac{-17}{4} = 12$$

$$(b) 2 \times 3 \div 5 + 8 - 4 = 7$$

$$\frac{26}{5} = 7$$

$$(c) 5 \times 6 + 8 \div 2 - 3 = 31$$

$$31 = 31$$

$$(d) 6 - 1 \times 2 \div 8 + 4 = 31$$

$$\frac{-39}{4} = 31$$

28. (a) Day after the day-before-yesterday five days ago is the 6th day which is Thursday. And so, the 3rd day will be Sunday. Three days before the day-after-tomorrow is Yesterday which is the 1st day of the five days. So, two days ago was Sunday.

29. (c) Seventh day from 10th is 17th. 5th day is Friday. Next Friday is on 12th, $17 - 12 = 5$, 5 days ahead of Friday will be Wednesday. So, 17th is Wednesday.

30. (b) Code Sentence

1. *mu mit es* who is *she*

2. *elb mu es* where is *she*

The code words 'mu' and 'es' are repeated in 1st and 2nd sentence. The only code left is 'elb' which means 'where'.

31. (b) Code Sentence

1. 069 *grapes are sweet*

2. 476 *very sweet fruit*

3. 509 *grapes are ripe.*

On decoding the given code. The code numbers '0' and '9' are repeated in 1st and 3rd sentence. The only code remaining is '5' which stands for 'ripe'.

32. (d) According to the question, 21, 23, 25, 27, 29, 31, 33, 35, 37, 39

33. (b) All other groups contain E, A and R.

34. (b) In all other groups, the small letters are vowels.

35. (c)

36. (d) Second image is the mirror image of (vertically placed mirror along y-axis) first image.

37. (a) Centre figure is get connected to vertices in next image.

38. (c) A common tangent line passes through the intersection point of two circles.

39. (c) A horizontal line and vertical line comes in picture in upper and lower portion of the figure respectively.

40. (b) As, Steering is the part of Car similiary, Handle is the part of Cycle.

41. (c) In every next figure the main design rotates 90° clockwise and two small lines move in and out.
42. (a) In every next figure the shaded portion of the circle moves ahead two steps clockwise.
43. (a) The first and third figures are similar. Hence, the answer figure will be similar to the second figure.
44. (b) In every next figure an arrow-head is added in the anticlockwise direction.
45. (b) In every next figure the circle and the shaded part is moving two steps clockwise.
46. (d) 47. (c) 48. (d) 49. (d) 50. (d)

MATHEMATICS

1. We get, Greatest number = 997754
Smallest number = 445579
2.
$$\begin{array}{r} 8 \overline{) 7921} 89 \\ +8 64 \\ \hline 169 1521 \\ 1521 \\ \hline \times \end{array}$$

 \therefore Square root of 7921 = 89.
3. According to the question,
 \therefore 1 man can do a work in 32 days.
 \therefore 24 men can do this work
 $\frac{32}{24} = \frac{4}{3}$ days = $1\frac{1}{3}$ days.
4. We know that,
S.I. = $\frac{P \times r \times t}{100} = \frac{400 \times 365 \times 150}{100 \times 100 \times 365} = ₹ 6$
Hence, simple interest = ₹ 6.
5. According to the question,
48540 = 49000
23467 = 23000
Required difference = 49000 - 23000 = 26000
6. On converting we get,
 $804.291 \text{ kg} = \frac{804291}{1000} \text{ kg}$
 $= \frac{804291}{1000} \times 100 \text{ deca gram}$
 $= 80429.1 \text{ deca grams}$
7. According to the question,
LCM of 12 and 20 = 60
Hence, the smallest number which when divided by 12 and 20 leaves no. remainder is 60.
8. According to the question,
Time taken by Sonali to complete her home work = $60 \times \frac{5}{6}$ minutes = 50 min.
Time taken by Priya to complete her home work = $60 \times \frac{3}{4}$ minutes = 45 min.
Hence, Priya is faster than Sonali.
9. After solving the fraction we get,
 $6\frac{3}{10} - 2\frac{3}{4} - 1\frac{2}{5} = \frac{63}{10} - \frac{11}{4} - \frac{7}{5}$
 $= \frac{126 - 55 - 28}{20} = \frac{126 - 83}{20}$
 $= \frac{43}{20} = 2\frac{3}{20}$.
10. According to question,
Let remaining two angles are x° and $3x^\circ$
(We know that the sum of the all angle of quadrilateral = 360°)
 $x^\circ + 3x^\circ + 90^\circ + 90^\circ = 360^\circ$
 $\Rightarrow 4x = 360 - 180 = 180^\circ$
 $\Rightarrow x = \frac{180}{4} = 45^\circ$
 $3x = 3 \times 45 = 135^\circ$
Hence, remaining two angles are 45° and 135° .
11. The ratio of 90 cm : 15 m
After changing m into cm we get = 150 cm
Hence, the ratio
 $= \frac{90}{150} = \frac{3}{5} = 3 : 5$.
12. Arrange in descending order of the following
 $\frac{3}{7}, \frac{3}{11}, \frac{3}{5}, \frac{3}{2}$ and $\frac{3}{17}$
 $\frac{3}{2}, \frac{3}{5}, \frac{3}{7}, \frac{3}{11}, \frac{3}{17}$ are in descending order.
13. According to the photograph,
(a) The maximum number of girl students in class I = $6 \times 4 = 24$ girls.
(b) The number of girls in class V less than the number of girls in class III.
In V class, no. of girls = 10
In III class, no. of girls = $5 \times 4 = 20$.
(c) Number of girls in class VII = $4 \times 3 = 12$.

14. According to the question,
Let, x cups he sells in a day.
 $\frac{3}{4}$ of $x = 51 \Rightarrow x = \frac{4 \times 51}{3} = 68$.

15. After simplification,

$$4\frac{6}{8} - \left\{ 3\frac{1}{3} + \left(2\frac{1}{2} - 1\frac{1}{4} \right) \right\}$$

$$= \frac{38}{8} - \left\{ \frac{10}{3} + \left(\frac{5}{2} - \frac{1}{4} \right) \right\}$$

$$= \frac{38}{8} - \left\{ \frac{10}{3} + \left(\frac{10-5}{4} \right) \right\} = \frac{38}{8} - \left\{ \frac{10}{3} + \frac{5}{4} \right\}$$

$$= \frac{38}{8} - \left\{ \frac{40+15}{12} \right\} = \frac{38}{8} - \frac{55}{12} = \frac{114-110}{24}$$

$$= \frac{4}{24} = \frac{1}{6}$$

16. According to question,
 $149 - 5 = 144$
 $101 - 5 = 96$
 HCF of 144 and 96 = 48
 Hence, required greatest no. = 48.

17. We know that

$$S.I. = \frac{P \times r \times t}{100}$$

$$= \frac{10000 \times 3 \times 4}{100 \times 12} = ₹ 100$$

Amount = $10000 + 100 = 10100$

Hence, she will receive ₹ 10100 at the end of 4th month.

18. According to the question,
 In 8 hrs watch gains 4 seconds
 In 24 hrs watch gains 12 seconds
 In 1 day watch gains 12 seconds
 In 7 days watch gains 12×7 seconds = 84 seconds.

19. According to the question,
 $200000 \div 176$ then we get
 quotient = 1136, remainder = 64.
 Hence, no. of boxes = 1136 and 64 apples were left.

20. Given, 61, 67, 71, 73 and 79 are prime numbers between 60 and 80.
 Average of all prime numbers

$$= \frac{61+67+71+73+79}{5} = \frac{351}{5} = 70.2$$

21. According to the question,
 Area of squared tile = a^2
 Required no. of tiles

$$= \frac{3 \times 4}{0.5 \times 0.5} = \frac{3 \times 4 \times 10 \times 10}{5 \times 5} = 48$$

22. (a) Triangle with lengths of sides 7 cm, 8 cm and 9 cm is scalene triangle.
 (b) $\triangle ABC$ with $AB = 8.7$ cm, $AC = 7$ cm and $BC = 6$ cm is scalene triangle.
 (c) In $\triangle PQR$ where $PQ = QR = PR = 5$ cm. This type of triangle is equilateral triangle.
 (d) In $\triangle DEF$, $\angle D = 90^\circ$
 This type of triangle is right triangle.
 (e) In $\triangle XYZ$, $\angle Y = 90^\circ$ and $XY = YZ$. This type of triangle is isosceles right triangle.

23. We have given that,
 LCM of 12, 18, 21 and 28 = 252
 The smallest 4 digit number = 1000
 $\therefore 252k + 3$ is the smallest number of 4 digit number.

$\therefore 252 \times 4 + 3 = 1008 + 3 = 1011$.

Hence, the required no. = 1011.

24. We know,

$$\text{Speed} = \frac{\text{Distance}}{\text{Time}}$$

$$\text{Speed} = 45 \text{ km/hr} = \frac{45 \times 1000}{60 \times 60} = \frac{25}{2} \text{ m/s}$$

$$\text{Distance} = 171 \text{ m} + 229 \text{ m} = 400 \text{ m}$$

$$\text{Time taken} = \frac{400}{\frac{25}{2}} = \frac{400 \times 2}{25} \text{ seconds}$$

$$= 16 \times 2 \text{ seconds} = 32 \text{ seconds.}$$

25. According to the question,
 $A : B : C = 5 : 7 : 8$

$$A's \text{ share} = \frac{5}{20} \times 4000 = ₹ 1000$$

$$B's \text{ share} = \frac{7}{20} \times 4000 = ₹ 1400$$

$$C's \text{ share} = \frac{8}{20} \times 4000 = ₹ 1600$$

26. We know that,
 Volume of cube = a^3
 So, no. of cubical boxes

$$= \frac{15 \times 9 \times 12}{3 \times 3 \times 3} = 5 \times 3 \times 4 = 60$$

27. (a) There are only seven symbols in Roman numerals. [IVXLCDM]
 (b) The predecessor of the smallest 8 digit number is 9999999.
 (c) $\frac{4}{7} \times 147 = 84$.
 (d) Length of a rectangle = $\frac{\text{Area}}{\text{Breadth}}$
 (e) 2 is the smallest prime number.
28. According to the question,
 Cost price of 48 China tea sets = ₹ 18000
 Cost of each China tea set = $\frac{18000}{48} = ₹ 375$
 Selling price of 48 China tea sets
 = 18000 + 1200 = ₹ 19200
 Selling price of each China tea set
 = $\frac{19200}{48} = ₹ 400$.
29. According to the question,
 Portion of the cake left in the evening = $\frac{5}{6}$ portion.
 Portion of the cake ate by Vina = $\frac{1}{2}$ of $\frac{5}{6}$

$$= \frac{5}{6} \times \frac{1}{2} = \frac{5}{12}$$
30. (a) We know that product of two numbers
 = LCM \times HCF

$$\text{HCF} = \frac{\text{Product of two numbers}}{\text{LCM}}$$

$$= \frac{2925}{195} = 15.$$
- (b) Cost of 1 quintal rice = ₹ 4800.75
 Selling price of 1 quintal rice = ₹ 4600.75
 Loss per quintal = ₹ 200
 Loss for 13.5 quintal = ₹ 200 \times 13.5

$$= ₹ 200 \times \frac{135}{10} = ₹ 2700.$$

LANGUAGE

1. Importance of Cleanliness

It is rightly said, "Cleanliness is next only to godliness". Cleanliness is to our body what godliness is to our soul and mind. For the purity of our mind we should have noble thoughts.

Similarly, for our good health, we must observe cleanliness in letter and spirit. Moreover, an unclean person or thing is very unsightly, unpleasant and a mere nuisance. Who wants to look at a filthy dog or a pig rolling in a heap of dung, though everybody would like the sight of a dancing peacock or a hopping sparrow? We should bathe daily and put on fresh well-washed clothes. We should keep our books neat and clean and our house spick and span. There should be no puddles which breed mosquitos and flies near our home as they are a source of many obnoxious diseases. Similarly, we should keep our roads, parks and village or town clean. Throwing of heaps of rubbish here and there or spitting everywhere can cause several diseases to ourselves and to others. Similarly, food should be fresh and covered and free from the approach of flies. Let the children be taught the habit of cleanliness from their very early life.

2. (a) Seasonal means relating to or characteristic of a particular season of the year.
 (b) Sand sea means a vast expanse of sand.
 (c) It means there is scarcity of water and plant in the central part of Sahara.
 (d) Sparse means thinly dispersed.
 (e) Vegetation means plants collectively.
3. (a) We must support the good cause.
 (b) Success depends upon your efforts.
 (c) We must follow the rule of discipline.
 (d) We must be regular in exercise.
 (e) It is essential to clear the test.
4. (a) Manju was crying as she had lost her pencil.
 (b) Anil said that his father was a doctor at that hospital.
 (c) The environmental protection is responsibility of everybody.
 (d) Who is knocking at the door?
 (e) Early to bed and early to rise is a good habit.
5. (a) Porter (b) Spendthrift
 (c) Colt (d) Beinnial
 (e) Carpenter
6. (a) Godliness (b) Play
 (c) hit (d) the
 (e) a

7. (a) We must get up early in the morning.
You have to pay the maintenance charges yearly.
(b) Every one know him for this greatness.
We are greateful to our teachers.
(c) We pray to God every morning.
The deer was an easy prey for the tiger.
(d) Never break the rules of discipline.
You must apply the brakes of your bicycle.
(e) Never lose your temper.
The brakes of your bicycle are loose.
8. (a) Safe (b) Sure
(c) Careful (d) Shallow
(e) Agree
9. (a) The news is so good that it cannot be true.
(b) Is she your mother?
(c) The town was destroyed in fire.
(d) He told that he was very thirsty.
(e) Raju is better than Gaurav.

10. House No. 23,
Dr. Kankarbag,
Patna
August 7, 20....
My Dear Sister,
Hope this letter of mine will find you in good health and happiness. I received the precious Rakhi sent by you today. It looks really beautiful in my hand.
Thank you very much for the lovely Rakhi. I am sending you a small gift and hope you will like it.
Hope we will be together on the next Raksha Bandhan.
Love to Arpan and Regards to dear Jijaji.

Yours affectionately
AKASH

Postage
To
Ms Deepika,
Sec-12, Noida,
U.P.

Sainik School Entrance Exam Solved Paper-2016

(Class-VI)

INTELLIGENCE TEST

Directions (Qs. 1 to 6) : In the following questions, select the number(s)/ letters from the given options for completing the given series.

1. 27, 28, 25, 25, 23, 22, 21, ?
 (a) 20 (b) 21
 (c) 19 (d) 18
2. 80, 63, 72, 72, 64, 81, 56, ?
 (a) 96 (b) 98
 (c) 89 (d) 90
3. 0, 5, 22, 57, ?, 205
 (a) 198 (b) 116
 (c) 172 (d) 92
4. R K F ? B
 (a) D (b) C
 (c) E (d) B
5. LAZ, NEX, PIV, ?
 (a) SLS (b) QNS
 (c) RMT (d) RMS
6. -bbcaa-bcaa-bc-a-bca
 (a) bacab (b) abbab
 (c) abcba (d) bcaab
7. In a certain code LIBERATE is written as 56403170, TRIBAL will be written in the same code as:
 (a) 734615 (b) 736415
 (c) 136475 (d) 034615
8. In a certain language, (a) 'FOR' stands for 'old is gold'; (b) 'ROT' stands for 'gold is pure'; (c) 'ROM' stands for 'gold is costly'. How will 'pure old gold is costly' be written?
 (a) TFROM (b) FOTRM
 (c) FTORM (d) TOMRF
9. Facing the West direction, Priya jogs for 20 m, turns left and goes further 40 m. She turns left again and jogs for 20 m. Then she turns right to go 20 m to reach the park. How far is the park from her starting point and in which direction?

- (a) 20 m South (b) 40 m West
 (c) 60 m South (d) 100 m East
10. Pointing to a woman in the photograph a man said, "She is the daughter of my grandmother's only son." How is the woman related to the man?
 (a) Mother (b) Daughter
 (c) Sister-in-law (d) Sister
11. If the following words are arranged in natural order, what will come in the last place in ascending order?
 1. Captain
 2. Brigadier
 3. Major
 4. Lieutenant-General
 5. Lieutenant
 (a) Lieutenant-General
 (b) Brigadier
 (c) Captain
 (d) Major
12. What would be the proper order of the following:
 1. Decameter 2. Meter
 3. Kilometer 4. Centimeter
 5. Milimeter
 (a) 1 4 3 2 5 (b) 5 4 1 2 3
 (c) 5 4 3 2 1 (d) 5 4 2 1 3

Directions (Qs. 13 to 17) : In the questions given below one term is missing. Based on the relationship of the two given words/ numbers find the missing term from the given options.

13. Physicist : Physics :: ? : Anatomy
 (a) Botany (b) Botanist
 (c) Body (d) Biologist
14. Frequently : Always :: Seldom : ?
 (a) Often (b) Rarely
 (c) Occasionally (d) Never

15. RRS : XMW :: ITB : ?
 (a) PNE (b) GON
 (c) RSW (d) OOF
16. BYDW : FVHT :: GQIO : ?
 (a) JLNP (b) QSTR
 (c) KMOL (d) KNML
17. Which number will come in the place of question mark?
 $25 : 81 :: 36 : ?$
 (a) 121 (b) 93
 (c) 65 (d) 103

Directions (Qs. 18 to 24) : In each of the following questions, there are four options. Three numbers/ words in these options, are alike in certain manner. Only one number/ word does not fit in. Choose the one which is different from the rest.

18. (a) Tutor (b) Principal
 (c) Pupil (d) Professor
19. (a) Pond (b) River
 (c) Stream (d) Brook
20. (a) Quotation (b) Duty
 (c) Tax (d) Octroi
21. (a) 3215 (b) 9309
 (c) 4721 (d) 2850
22. (a) 24 (b) 90
 (c) 54 (d) 36
23. (a) 3730 (b) 6820
 (c) 5568 (d) 4604
24. (a) 2587 (b) 7628
 (c) 8726 (d) 2867
25. In the following list of numerals, how many 3s are followed by 3, but NOT preceded by 3?
 $2\ 4\ 6\ 3\ 3\ 1\ 5\ 7\ 8\ 3\ 3\ 3\ 4\ 6\ 2\ 3\ 3\ 3\ 9\ 7\ 2\ 3$
 (a) 1 (b) 2
 (c) 3 (d) 4
26. If the + and \times signs of the following equations are inter-changed, which will be the correct equation?
 (a) $7 \times 5 + 3 = 20$ (b) $4 + 9 \times 1 = 42$
 (c) $6 \times 5 + 8 = 46$ (d) $2 + 11 \times 4 = 28$
27. If '+' stands for multiplication, ' \times ' stands for addition, ' \div ' stands for subtraction and '-' stands for division, then what will be the result of the following equation?
 $7 \times 4 \div 10 \times 2 + 5 = ?$
 (a) 7 (b) 0
 (c) 11 (d) 15

28. If the day before yesterday was Thursday, when will Sunday be?
 (a) Tomorrow
 (b) Day after tomorrow
 (c) Today
 (d) Two days after today
29. If the seventh day of a month is three (3) days earlier than Friday, what day will it be on the nineteenth day of the month?
 (a) Sunday (b) Monday
 (c) Wednesday (d) Friday

Directions (Qs. 30 & 31) : In the following questions select the right option which indicates the correct code for the word or letter given in the question.

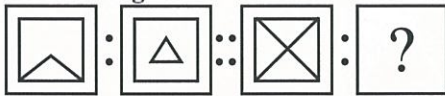
30. If 'w' is coded as 'a', 's' as 'r' and 'r' as 'w', how will 'answer' be written?
 (a) wnsaes (b) anraew
 (c) anrwas (d) wnraes
31. In certain military code, SYSTEM is written as SYSMET, and NEARER as AENRER, what will be the code for FRACTION?
 (a) CRAFNOIT (b) FRACITNO
 (c) CARFNOIT (d) FRACNOIT
32. A and B are two brother. C is sister of B. D is sister of E. E is son of A. Who is D's uncle?
 (a) D (b) E
 (c) B (d) C

Directions (Qs. 33-35) : In each of the following series determine the order of the letters. Then from the given options select the one which will complete the given series.

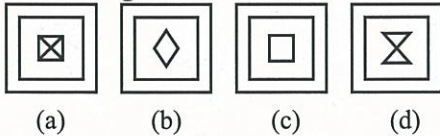
33. B A F E J I P O ? U
 (a) V (b) T
 (c) S (d) Q
34. V R O K ? D
 (a) L (b) I
 (c) H (d) J
35. CFI, IKM, OPQ, ?
 (a) UUU (b) UST
 (c) VUS (d) TUV

Directions (Qs. 36-40) : The second figure in the first unit of the Problem Figures bears a certain relationship to the first figure. Similarly, one of the figures in the Answer Figures bears the same relationship to the first figure in the second unit of the Problem Figures. Locate the figure which would fit the question mark.

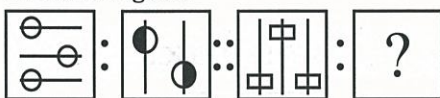
36. Problem Figures



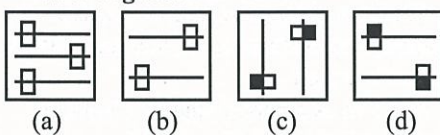
Answer Figures



37. Problem Figures



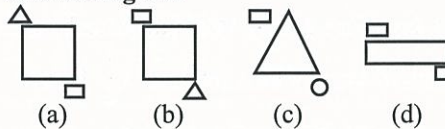
Answer Figures



38. Problem Figures



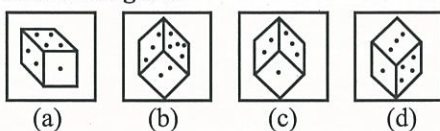
Answer Figures



39. Problem Figures



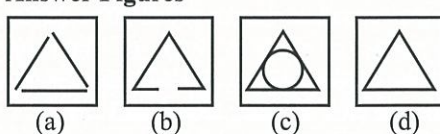
Answer Figures



40. Problem Figures



Answer Figures

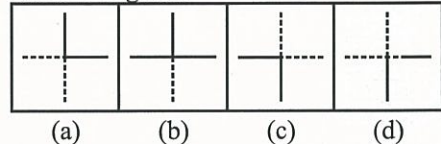


Directions (Qs. 41-45) : Each of the following questions consists of problem figures followed by answer figures. Select a figure from amongst the answer figures which will continue the same series or pattern as established by the problem figures.

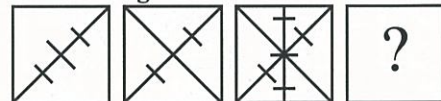
41. Problem Figures



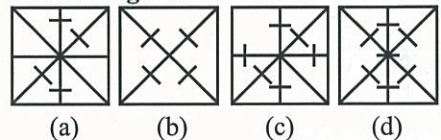
Answer Figures



42. Problem Figures



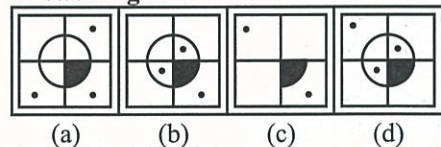
Answer Figures



43. Problem Figures



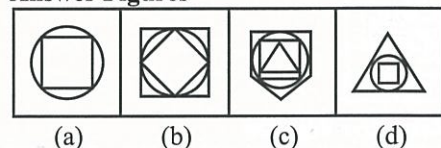
Answer Figures



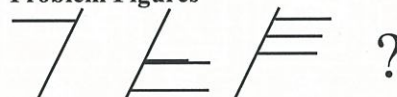
44. Problem Figures

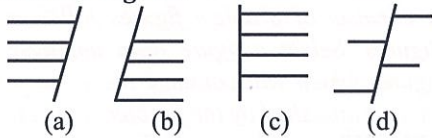


Answer Figures



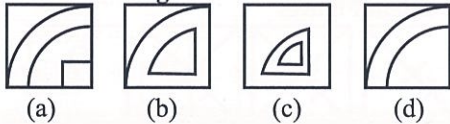
45. Problem Figures



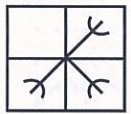
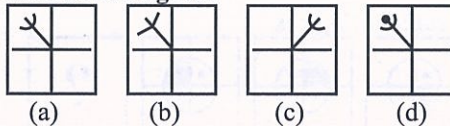
Answer Figures

Directions (Qs. 46-50) : In each question, which one of the alternative figures will complete the give figure pattern?

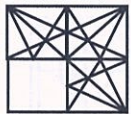
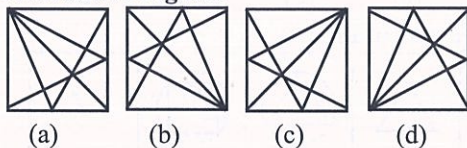
46. **Pattern :**

**Alternative figures**

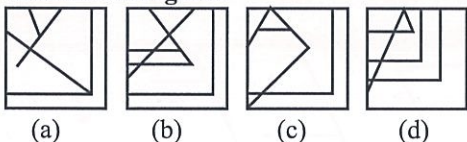
47. **Pattern :**

**Alternative figures**

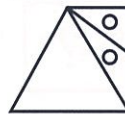
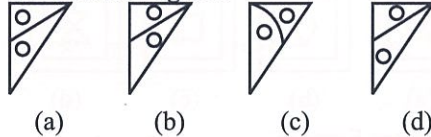
48. **Pattern :**

**Alternative Figures**

49. **Pattern :**

**Alternative Figures**

50. **Pattern :**

**Alternative Figures****MATHEMATICS****Section-I**

(Each question carries two marks.)

- Estimate the difference of 879 and 338 to the nearest hundred.
- Write 15 m as a percentage of 1000 km.
- Find LCM of 120, 210 and 225.
- Arrange $\frac{1}{3}$, $\frac{3}{10}$, $\frac{5}{6}$, $\frac{2}{5}$ in ascending order
- Find the sum of $1\frac{3}{5}$ and $2\frac{7}{10}$.
- An aeroplane covers 1020 kms in an hour. How much distance will it cover in $4\frac{1}{6}$ hours.
- Convert 131°F into Celcius scale.
- Convert 2222 hours into days and hours.
- One of the two equal angles of an Isosceles triangle measures 55° . Find the measure of all the angles of triangle.
- Find the radius of a circle whose circumference is 79.2 cm. Given that $\pi = \frac{22}{7}$.

Section-II

(Each question carries three marks.)

- Find the square numbers lying between 75 and 225.
- Simplify : $125 - 25 \times 125 \div 25 + 25$.
- Sudha scored 23 marks out of 30 in maths and 29 marks out of 50 in Hindi. In which subject did she perform better and by what percentage?
- Find the HCF of 902, 1394 and 3321.
- Jubaida took a loan of ₹ 4000 on 12% annual

- interest. After 3 years how much money she will have to return?
16. Find the square root of
- (a) $6\frac{9}{36}$ (b) $5\frac{41}{16}$
17. A baby elephant drinks around 12 litre of milk every day. How much milk will it drink in two years?
18. John plans to tile his kitchen floor with square tiles. Each side of the tile is 10 cm. His kitchen is 2.2 M long and 1.8 M wide. How many tiles will John need?
19. There are 24 Laddoos in 1 kg. How many Laddoos will be there in 8 kg? If 16 Laddoos can be packed in 1 box, how many boxes are needed to pack all the laddoos?
20. Find the mean of first ten even numbers.
25. How many stones of 0.50 m^2 can be fixed in a court yard of length 15 m and width 10 m. If cost of fixing one stone is ₹ 2.50, what will be the expenditure on fixing stones in the courtyard?
26. An alloy contains 15% Carbon, 25% Zinc and rest in Copper. In 60 Kg alloy, find the quantity of each metal.
27. Fill in the blanks:
- (a) $\frac{6}{21} = \frac{?}{7}$ (b) $.01 = \frac{1}{?}$
- (c) Largest 7 digit number is
- (d) Radius = $\frac{\text{Diameter}}{?}$
- (e) In 75897, place value of 8 is
28. The denominator of a fraction is greater than its numerator by 3. If 3 is subtracted from the numerator and 2 is added to its denominator, the new number become $\frac{1}{5}$. Find the original number.
29. Out of 40 students of a class, 60% passed in first division, 30% in second division and remaining in third division. Find out the number of students in each category?
30. (a) A shopkeeper sells a box costing ₹ 900 giving 15% discount. Find out the sale price of the box?
- (b) The HCF and LCM of two number is 18 and 252 respectively. If one number is 126 find out another number?

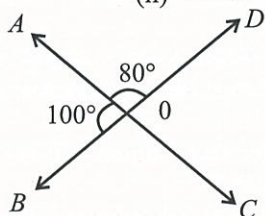
Section-III

(Each question carries five marks.)

21. Annual Income of Rohan is ₹ 6,00,000. He spends ₹ 99,250 on food, ₹ 36,750 on clothes and ₹ 1,11,500 on other expenditures annually. What is his annual saving? What % of his income does he save in a year?

22. (a) Find the value of following angles:

- (i) $\angle BOC$ (ii) $\angle COD$

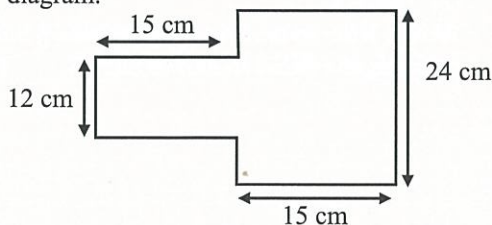


- (b) Find HCF of 20 and 70 by prime factorization method.

23. Simplify :

$$0.2 [3.5 - 0.3 \{2.5 + 1.3(3.6 + 1.4)\}]$$

24. Find out perimeter and area of the given diagram.



LANGUAGE

1. Write 15 sentences on anyone of the following topics: (15)
My Friend or Aim of my life
2. Read the following passage carefully and answer the question that follow : ($5 \times 3 = 15$)
Florence Nightingale was born on the 15th May, 1820 at Florence in Italy and her parents called her after the name of the city where she was born. Her main ambition was to be a nurse and so she gave up all thoughts of marriage and personal happiness. She spent years visiting hospital after hospital. Day and night she visited every bed in the hospital to see that no patient was neglected and that all were as comfortable as possible. However hard

she might have worked all day, every night she would take her lamp and move from bed to bed. 'The Lady with the Lamp' the soldiers called her and that is the name by which the world has remembered her ever since.

- Where was Florence Nightingale born?
- Why her parents named her Florence Nightingale?
- Why Florence Nightingale was called 'The Lady with the Lamp'?
- Give opposite of 'comfortable'?
- What did she do every night with a lamp in her hand?

3. Make a sentence of your own for each underlined word given in the following passage. (Do not copy any sentence from the given paragraph). $(5 \times 2 = 10)$

People who live in regions **covered** with forests and surrounded by hills generally believe that the **desert** is a vast **stretch** of dry, hot and sandy land. But those who have studied it, find the desert quite beautiful. It is not entirely **uninhabited** either. A **variety** of people, animals and plants make the desert their home.-

-
-
-
-
-

4. From meaningful sentences by rearranging the words in proper order : $(5 \times 2 = 10)$

- a good/ exercise/ swimming/ is
- Middle East/ India/ to/ the/ exporting/ is/ onions
- was/ John/ drinking/ tea
- man/ a strong/ Sardar Patel/ was
- named/ Diamond/ had/ Newton/ little dog/a

5. Give one word for the following : $(5 \times 1 = 5)$

- One who knows everything
- A building in which monks live
- A person whose profession is to keep accounts
- All the customs and beliefs of a society
- Eater of flesh

6. Choose the correct article (a, an or the) and fill in the blanks. $(5 \times 2 = 10)$

- Here is book I borrowed from you yesterday.
- Jordan drives Mazda.
- He goes to Delhi Golf Course on Sundays.
- James works as electrician.
- Raman sang song.

7. Use the given word in separate sentences of your own to show the difference in the meaning of the words of the pair given below : $(5 \times 2 = 10)$

- Principal, Principle
- Cattle, Kettle
- Whether, Weather
- Idle, Idol
- Floor, Flour

8. Change each of the following as directed: $(5 \times 2 = 10)$

- I met an old man.
(Change into Future Continuous)
.....
- The driver stopped the train.
(Change into Passive Voice)
.....
- The Sky grew dark.
(Change into negative sentence)
.....
- Mr Verma teaches us grammar.
(Change into interrogative sentence)
.....
- Peter said, "Imran will not be playing the match."
(Change into indirect sentence)
.....

9. Give the Antonym (opposite) of the following words : $(5 \times 1 = 5)$

- | | |
|-------------|--------------|
| (a) Arrest | (b) Boon |
| (c) Heaven | (d) Grateful |
| (e) Bravery | |

10. Write a letter to the Principal requesting him to organize an education tour to Shimla. (10)

Solutions

INTELLIGENCE TEST

1. (c) 27 28 25 25 23 22 21 19
-

Hence, next term of the series is 19.

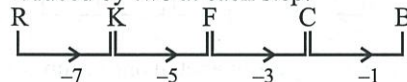
2. (d) 80 63 72 72 64 81 56 90
-

Hence, next term of the series is 90.

3. (b) The series follows this sequence : cube of natural numbers starting from 1 minus odd numbers starting from 1.

0	5	22	57	116	205
↓	↓	↓	↓	↓	↓
$1^3 - 1$	$2^3 - 3$	$3^3 - 5$	$4^3 - 7$	$5^3 - 9$	$6^3 - 11$

4. (b) The difference between the letters is reduced by two at each step.



5. (c)
-

6. (b) The series is abbca, abbca, abbca, abbca.
7. (b) The letters of the word TRIBAL are picked from LIBERATE. So will be the coded numbers.

in the given

LIBERATE → given word

5 6 4 0 3 1 7 0 → codes

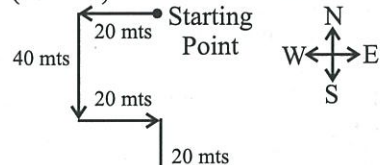
Similarly,

TRIBAL → word to be coded

7 3 6 4 1 5 → answer codes

8. (a) From the given information, we get that
F – Old, T – Pure, M – Costly
R – Gold or is, O – Gold or is
Hence, code for ‘Pure old gold is costly’ is written as ‘TFROM’.

9. (c) $(40 + 20) = 60$ metres South



10. (d)
-

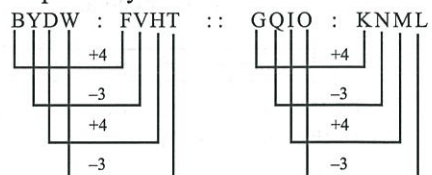
Man (sister) Daughter

‘My grandmother’s only son’ is the father of the man, and ‘daughter of my grandmother’s only son’ is the sister of the man.

11. (a) The arrangement of ranks in ascending order is -
Lieutenant, Captain, Major, Brigadier, Lieutenant-General.
12. (d) The proper order of measurement in increasing order is -
Milimeter, Centimeter, Meter, Decameter, Kilometer.
13. (d) Physicist deals with the subject Physics and biologist with subject anatomy.
14. (c) The related words are near in meaning.
15. (b) R R S : X M W :: I T B : G O N



16. (d) The letters are moved +4, -3, +4, -3 steps respectively.



17. (a) All the numbers are squares of different numbers.

25	81	36	121
↓	↓	↓	↓
5^2	9^2	6^2	11^2

18. (c) All others are instructors. Pupil learns from the instructor.
19. (a) All others are running forms of water.
20. (a) All others are forms of taxes.
21. (b) In other numbers, no digit is repeated.
22. (a) In other numbers, the sum of both the digits is 9.
23. (b) In all other numbers, two digits are same.
24. (a) Other numbers are made with digits 2, 6, 7 and 8.
25. (c) $24 \begin{smallmatrix} 6 & 3 & 3 \\ 1 \end{smallmatrix} 157 \begin{smallmatrix} 8 & 3 & 3 \\ 2 \end{smallmatrix} 346 \begin{smallmatrix} 2 & 3 & 3 \\ 3 \end{smallmatrix} 39723$
26. (c) After interchanging the signs the equations are :
- (a) $7 + 5 \times 3 = 22$ which is wrong
- (b) $4 \times 9 + 1 = 37$ which is wrong
- (c) $6 + 5 \times 8 = 46$ which is correct
- (d) $2 \times 11 + 4 = 26$ which is wrong
27. (c) The given expression : $7 \times 4 - 10 \times 2 + 5$
After interchanging (+) and (\times),
 $7 + 4 - 10 + 2 \times 5$
 $= 7 + 4 - 10 + 10 = 11.$
28. (a) Thursday – Day-before-yesterday
Friday – Yesterday
Saturday – Today
Sunday – Tomorrow
29. (a) 7th day is 3 days earlier than Friday so, 10th day is Friday, so also is 17th.
 \therefore 19th day will be 2nd day ahead of Friday i.e., Sunday.
30. (b) Alphabet whose codes are given
- w \rightarrow a
s \rightarrow r
r \rightarrow w

All other alphabet will remain unchanged, so 'answer' will be coded as :

a n s w e r a n r a e w

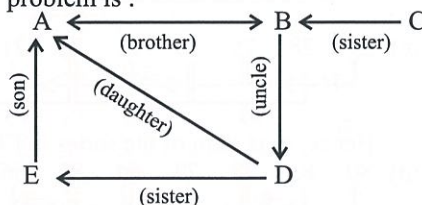
31. (c) The word is divided into two equal parts and the letters of each part are written in reverse order.

SYS TEM SYS MET
— NEA RER AEN RER

Similarly,
FRAC TION

CARF NOIT

32. (c) The relationship chart based on the problem is :



When D is sister of E, who is son of A then D is daughter of A. Brother of A is B and so, B is D's uncle.

33. (a) Each vowel (AEIOU) is preceded by the letter that comes next to it in the natural alphabetical series.

B A F E J I P O V U

34. (c) The letters are in reverse series and the difference is four and three alternatively.

V R O K H D
-4 -3 -4 -3 -4

35. (a) The three alphabet in one group correspond to the alphabet in the next group in the manner +6, +5, +4 respectively, i.e.

C F I I K M O P Q U U U
+6 +6 +6
+5 +5 +5
+4 +4 +4

36. (d)



37. (d)



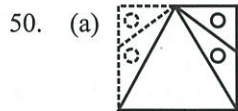
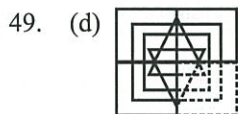
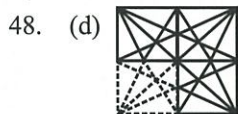
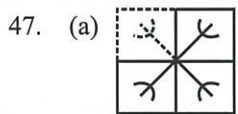
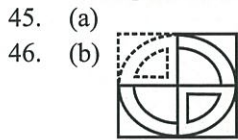
38. (a) The element at the bottom is moved to the diagonal corner, the element in the top is enlarged and moved to the centre and element in the middle is reduced and moved to the bottom right corner.

39. (c)

40. (d) The inner shape in the first figure is removed to get the second figure.

41. (a) The cross is turned 90° clockwise at each step.

42. (a)
 43. (d) The complete figure is turned 90° clockwise at each step.
 44. (c) A new figure is added to the previous set of figures at each step.



MATHEMATICS

1. Difference of given numbers
 $= 879 - 338 = 541$
 $= 500$ (Nearest hundred).

2. Let $15 \text{ m} = (1000 \text{ Km}) \times \frac{x}{100}$

$$15 = 1000 \times 1000 \times \frac{x}{100}$$

$$\Rightarrow 15 = 10000x$$

$$\Rightarrow x = \frac{15}{10000} = 0.0015\%$$

3. L.C.M. of 120, 210, 225

2	120,	210,	225
3	60,	105,	225
5	20,	35,	75
	4,	7,	15

$$\text{L.C.M.} = 2 \times 3 \times 5 \times 4 \times 7 \times 15 = 12600.$$

4. To establish the comparison, we take L.C.M. of the given fraction

$$= \frac{1}{3}, \frac{3}{10}, \frac{5}{6} \text{ and } \frac{2}{5} = \frac{10, 9, 25, 12}{30}$$

$$\therefore \frac{3}{10}, \frac{1}{3}, \frac{2}{5}, \frac{5}{6} \text{ are in ascending order.}$$

5. $\text{Sum} = 1\frac{3}{5} + 2\frac{7}{10} = \frac{8}{5} + \frac{27}{10}$

$$= \frac{16 + 27}{10} = \frac{43}{10} = 4\frac{3}{10}.$$

6. \therefore in 1 hour aeroplane covers 1020 km.

$$\therefore \text{In } \frac{25}{6} \text{ hours aeroplane will cover}$$

$$= 1020 \times \frac{25}{6} \text{ km}$$

$$= 170 \times 25 \text{ km} = 4250 \text{ km.}$$

7. $\therefore \frac{C}{5} = \frac{F - 32}{9}$

$$\Rightarrow \frac{C}{5} = \frac{131 - 32}{9} = \frac{99}{9}$$

$$\Rightarrow \frac{C}{5} = 11$$

$$\Rightarrow C = 55^\circ \text{C}$$

$$\text{Hence, } 131^\circ \text{F} = 55^\circ \text{C.}$$

8. 24 hours = 1 day

$$\therefore 2222 \text{ hours} = \frac{2222}{24} \text{ days}$$

$$= 92 \text{ days } 14 \text{ hours.}$$

9. Let, third angle $= x^\circ$

$$\angle A + \angle B + \angle C = 180^\circ$$

$$\Rightarrow 55^\circ + 55^\circ + x^\circ = 180^\circ$$

$$\Rightarrow x + 110^\circ = 180^\circ$$

$$\Rightarrow x = 70^\circ$$

$$\therefore \angle A = 55^\circ, \angle B = 55^\circ, \angle C = 70^\circ.$$

10. Circumference, $C = 2\pi r$

$$\Rightarrow 79.2 = 2 \times \frac{22}{7} \times r$$

$$\Rightarrow r = \frac{79.2 \times 7}{2 \times 22} = 1.8 \times 7 = 12.6$$

$$\text{Hence, radius of the circle} = 12.6 \text{ cm.}$$

11. The square numbers 81, 100, 121, 144, 169, 196 are lying between 75 and 225.
12. Given Expression,
 $125 - 25 \times 125 \div 25 + 25$
 $= 125 - 25 \times 5 + 25$
 $= 125 - 125 + 25 = 25.$
13. % of Maths $= \frac{23}{30} \times 100 = \frac{230}{3} = 76.6\%$
 % of Hindi $= \frac{29}{50} \times 100 = 58\%$
 Maths is better than Hindi.
 Difference $= 76.6\% - 58\% = 18.6\%.$
14. H.C.F. of 902 and 1394
- $$\begin{array}{r} 1 \\ 902 \overline{) 1394} \\ \underline{902} 1 \\ 492 \overline{) 902} \\ \underline{492} 1 \\ 410 \overline{) 492} \\ \underline{410} 5 \\ 82 \overline{) 410} \\ \underline{410} \\ \times \end{array}$$
- H.C.F. of 82 and 3321
- $$\begin{array}{r} 40 \\ 82 \overline{) 3321} \\ \underline{3280} 2 \\ 41 \overline{) 82} \\ \underline{82} \\ \times \end{array}$$
- Hence required H.C.F. = 41
15. Sum $P = ₹ 4000$
 Rate $r = 12\%$
 Time $t = 3$ years

$$S.I. = \frac{P \times r \times t}{100} = \frac{4000 \times 12 \times 3}{100} = 1440$$

 $A = P + S.I. = 4000 + 1440 = ₹ 5440$
 Hence, Jubaida will have to return ₹ 5440 after 3 years.
16. (a) $\sqrt{6 \frac{9}{36}} = \sqrt{\frac{225}{36}} = \frac{15}{6} = \frac{5}{2} = 2.5$
 (b) $\sqrt{5 \frac{41}{16}} = \sqrt{\frac{121}{16}} = \frac{11}{4} = 2.75.$
17. In 1 day baby elephant drinks 12 l of milk
 Now, 2 Years = 730 days

In 730 days baby elephant drink
 $= 12 \times 730 \text{ l of milk} = 8760 \text{ l milk}.$

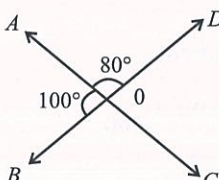
18. Area of the kitchen floor $= 220 \times 180 \text{ cm}^2$
 Area of each tile $= 10 \times 10 \text{ cm}^2$
 $\therefore \text{No. of tiles} = \frac{220 \times 180}{10 \times 10} = 22 \times 18 = 396.$
19. In 1 kg = 24 Laddoos
 In 8 kg $= 24 \times 8 = 192$ Laddoos
 Now, 1 box contains 16 Laddoos.
 So, required no. of boxes $= \frac{192}{16} = 12.$
20. Mean

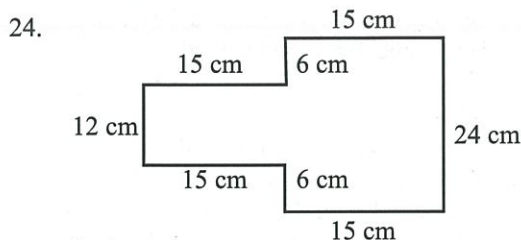
$$= \frac{2+4+6+8+10+12+14+16+18+20}{10}$$

 $= \frac{110}{10} = 11.$
 Hence, mean of first ten even numbers = 11
21. Annual income = ₹ 600000
 Annual expenditure = ₹ 99250

$$\begin{array}{r} ₹ 36750 \\ ₹ 111500 \\ \hline ₹ 247500 \end{array}$$

 Annual saving $= ₹ 600000 - ₹ 247500$
 $= ₹ 352500$

$$\% \text{ Saving} = \frac{352500}{600000} \times 100 = \frac{705}{12} = 58.75\%.$$
22. (a) 
 $\therefore AC \text{ and } BD \text{ intersect at } O.$
 (i) $\angle BOC = \angle AOD = 80^\circ$
 (Vertically opp. angles)
 (ii) $\angle COD = \angle AOB = 100^\circ$
 (Horizontally opp. angles)
 (b) $20 = 2 \times 2 \times 5$
 $70 = 2 \times 5 \times 7$
 $\therefore \text{H.C.F.} = 2 \times 5 = 10.$
23. $0.2 [3.5 - 0.3 \{2.5 + 1.3(3.6 + 1.4)\}]$
 $= 0.2 [3.5 - 0.3 \{2.5 + 1.3(5)\}]$
 $= 0.2 [3.5 - 0.3 \{2.5 + 6.5\}]$
 $= 0.2 [3.5 - 0.3 \{9\}]$
 $= 0.2 [3.5 - 2.7] = 0.2 [0.8] = 0.16.$



Perimeter

$$= 12 + 15 + 6 + 15 + 24 + 15 + 6 + 15 = 108 \text{ cm}$$

Area of the given figure

$$= 12 \times 15 + 15 \times 24 = 180 + 360 = 540 \text{ cm}^2.$$

25. No. of stone = $\frac{15 \times 10 \times 100}{50} = 300$
 \therefore cost of 1 stone = ₹ 2.50
 \therefore Cost of 300 stones = $\frac{250}{100} \times 300 = ₹ 750.$

26. Carbon = 15%
 $= \frac{15}{100} \times 60 \text{ kg} = 9 \text{ kg}$

Zinc = $\frac{25}{100} \times 60 \text{ kg} = 15 \text{ kg}$

Copper = $\frac{60}{100} \times 60 \text{ kg} = 36 \text{ kg}$

27. (a) $\frac{6}{21} = \frac{2}{7}$

(b) $.01 = \frac{1}{100}$

(c) Largest 7 digit number = 9999999

(d) Radius = $\frac{\text{Diameter}}{2}$

(e) In 75897, place value of 8 = 800.

28. Let, numerator = x
 \therefore Denominator = $x + 3$

\therefore Fraction = $\frac{x}{x+3}$

According to the question,

$$\frac{x-3}{x+3+2} = \frac{1}{5}$$

$$\Rightarrow \frac{x-3}{x+5} = \frac{1}{5}$$

$$\Rightarrow 5x - 15 = x + 5$$

$$\Rightarrow 4x = 20 \Rightarrow x = 5$$

$$\therefore \text{Fraction} = \frac{x}{x+3} = \frac{5}{8}.$$

29. No. of students in first division

$$= 60\% \text{ of } 40 = \frac{60}{100} \times 40 = 24$$

No. of students in second division

$$= 30\% \text{ of } 40 = \frac{30}{100} \times 40 = 12$$

No. of students in third division

$$= 10\% \text{ of } 40 = \frac{10}{100} \times 40 = 4.$$

30. (a) Discount = 15% of $x = \frac{15}{100} \times x = \frac{3x}{20}$

$$\text{S.P.} = x - \frac{3x}{20} = \frac{17x}{20}$$

When M.P. ₹ x then S.P. = $\frac{17x}{20}$

When M.P. ₹ 900 then S.P.

$$= \frac{17x}{20 \times x} \times 900 = 17 \times 45 = ₹ 765$$

Hence, the sale price of the box = ₹ 765

(b) \therefore ,

H.C.F. \times L.C.M. = First no. \times 2nd no.

$$\therefore \text{2nd number} = \frac{\text{H.C.F.} \times \text{L.C.M.}}{\text{First number}}$$

$$= \frac{18 \times 252}{126} = 36.$$

Hence, another number = 36.

LANGUAGE

1. Aim of my Life

It is rightly said that the chief aim of education is to broaden the horizon of human mind. But we know that in the modern world, we also have to make a living by taking up some profession. I have decided to become a teacher as I grow up. It is rightly said that a teacher is a nation builder. By becoming a teacher, I want to kill two birds with one stone. On the one hand, I want to make a decent living. The teachers are well-paid these days. They also command a high respect in society. On the other hand, my aim is to serve the society at large. I want to inculcate great moral values of life in the minds of young children. This I'll do while blending matter-of-fact and imaginative elements in my teaching. Fortunately, I'm a

- brilliant student and I hope I'll achieve my aim in life. Moreover, both my father and mother are teachers and they are my good guides and a source of great inspiration to me.
2. (a) Florence Nightingale was born at Florence in Italy.
(b) Her parents named her Florence Nightingale after the name of the city where she was born.
(c) She was named so because she used to visit every bed in the hospital with a lamp.
(d) Uncomfortable.
(e) She moved with a lamp in her hand to see that all the patients were properly cared.
 3. (a) She covered her face with a scarf.
(b) The camel is called the ship of the desert.
(c) There is a barren stretch of land in the village.
(d) The place is almost uninhabited.
(e) The student gave a variety of reasons to study at Sainik School.
 4. (a) Swimming is a good exercise.
(b) India is exporting onions to the Middle East.
(c) John was drinking tea.
(d) Sardar Patel was a strong man.
(e) Newton had a little dog named Diamond.
 5. (a) Omniscient (b) Monastery
(c) Accountant (d) Traditions
(e) Carnivorous
 6. (a) the (b) a
(c) the (d) an
(e) a
 7. (a) Who is the principal of your school?
What is the principle of your life?
 - (b) He was grazing the cattle in the field.
He poured Tea from the kettle.
 - (c) She asked me whether I was going to school.
The weather is cozy now-a-days.
 - (d) Never sit idle, do something.
He was selected the Indian Idol last year.
 - (e) You must clean the floor everyday.
He grinds the wehat to make flour.
 8. (a) I shall have been meeting the old man.
(b) The train was stopped (by the driver)
(c) The sky did not grow bright.
(d) Does Mr. Verma teach us grammar?
(e) Peter told that Imran would not be playing the match.
 9. (a) Release (b) Bane
(c) Hell (d) Thankless
(e) Cowardice
 10. To
The Principal
Sainik School
Patna.

Respected Sir,

I am a student of class VI in your school. Our class teacher has told us that every year on school organises an educational tour to some far off place. I request you to organise a tour to Delhi this year. Delhi is a famous tourist spot. There is a lot for student to learn in Delhi about the Historic Palaces..

I hope you will accept my request.

Thanking you.

Yours Obediently
XYZ.

Sainik School Entrance Exam Solved Paper-2015

(Class-VI)

INTELLIGENCE TEST

Directions (Qs. 1 to 5) : Out of the four choices: (a), (b), (c) and (d) given in each problem three are similar in one way. However one choice is not like the other three. Choose the choice which is different from the rest and write the answer in the answer box.

1. (a) Open & Close (b) Hate & Dislike
(c) Rise & Fall (d) Go & Come
2. (a) R5A1T6 (b) B2A1D4
(c) C3E5A1 (d) H8B2D4
3. (a) Far and Near (b) Last and First
(c) Distance and Fare (d) High and Low
4. (a) You (b) He
(c) She (d) Am
5. (a) 699 (b) 789
(c) 773 (d) 798

Directions (Qs. 6 to 9) : In each of the following questions, arrange the letters of each word then find fourth letter.

6. ENKAL (A BODY PART)
7. HCDNGRHAIA (A UNION TERRITORY)
8. HEPES (AN ANIMAL)
9. NEGOTAR (A FRUIT)
10. (a) Lion and Roar
(b) Elephant and Trumpet
(c) Snake and Hiss
(d) Dogs and Cook
11. (a) Cow and Goat
(b) Horse and Mare
(c) Dog and Bitch
(d) Cock and Hen

Directions (Qs. 12 to 15) : Choose the right answer and write the answer in the answer box.

12. Uncle is to Aunt as Cook is to
(a) Fowl (b) Hen
(c) Chicken (d) Duck

13. Wood is to table as is to coat
(a) Shirt (b) Wear
(c) Trouser (d) Cloth
14. Boy is to Girl as nephew is to
(a) Uncle (b) Niece
(c) Brother in law (d) Aunt
15. Fish is to Bird as submarine is to
(a) Ship (b) Train
(c) Aeroplane (d) Car
16. Disease : Pathology :: Planet : ?
(a) Sun (b) Stars
(c) Astrology (d) Astronomy
17. Waiting : Boredom :: Education : ?
(a) Class (b) Enlightenment
(c) Schooling (d) Cunning
18. Light: sun :: Heat : ?
(a) Electricity (b) Moon
(c) Fire (d) Star

Directions (Qs. 19 to 22) : Below are given numbers/ alphabets/ figures followed by 4 answer choices marked as (a), (b), (c) and (d). Choose a correct answer option, which will continue the series.

19. 246, 357, 468, 579
(a) 759 (b) 690
(c) 678 (d) 459
20. A/2, 4/C, E/6
(a) 8/G (b) 8/K
(c) 7/G (d) G/8
21. B, D, G, K
(a) P (b) A
(c) O (d) N
22. 1243, 2354, 3465,
(a) 4576 (b) 4675
(c) 4796 (d) 4367
23. C - 3, E - 6, G - 12, I - 24, K - 48, ?
(a) S - 48 (b) M - 96
(c) L - 96 (d) O - 48
24. 3, 6, 8, 16, 18,
(a) 28 (b) 36
(c) 54 (d) 34






25. KPA, LQB, MRC, NSD, ?
 (a) UOT (b) OTE
 (c) EOT (d) TOE
26. If CHAIR is coded as FKDLU, then RAID is coded as :
 (a) ULGD (b) ULKG
 (c) ULDG (d) UDLG
27. If "grey" is called "brown", "white" is called "pink", "red" is called "grey", "black" is called "red", "brown" is called "white", what is the colour of "coal" ?
 (a) brown (b) red
 (c) black (d) pink
28. If $5 \times 8 = 28$, $3 \times 7 = 12$, $8 \times 6 = 35$, then find the value of 13×13 ?
 (a) 169 (b) 130
 (c) 140 (d) 144
29. If TOUR is written as 1234, CLEAR is written as 56784 and SPARE is written as 90847, find the code for CARE?
 (a) 1247 (b) 4847
 (c) 5247 (d) 5847
30. If RAJI has been coded as TCLK, then what would be the code for KLCT?
 (a) MENV (b) RAJI
 (c) MNFV (d) MNEV

Directions (Qs. 31 & 32) : Choose the word, which will come third in the dictionary and write the answer in answer box.

31. (a) Battalion (b) Barrister
 (c) Banana (d) Balance
32. (a) Dear (b) Decide
 (c) Diagram (d) Departure
33. If \div means \times , \times means $+$, $+$ means $-$ and $-$ means \div . Find the value of $16 \times 3 + 5 - 2 \div 4$
 (a) 19 (b) 10
 (c) 9 (d) 13
34. What is common in hydrometer, lactometer and manometer?
 (a) They are units of measurement
 (b) They are instruments
 (c) They are scales
 (d) They are equipments used in physics
35. What is common in Bauxite, Iron, Tungsten and Monazite?

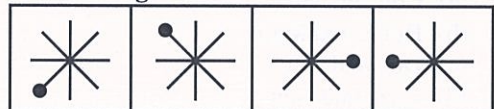
- (a) They are all minerals
 (b) They are all metals
 (c) They are all chemicals
 (d) None of these

Directions (Qs. 36-40) : In each of the following sets of figures, select the one that is different from the rest.

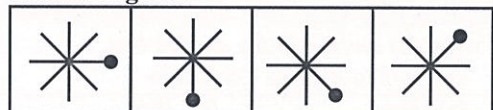
36. 
 (a) (b) (c) (d)
37. 
 (a) (b) (c) (d)
38. 
 (a) (b) (c) (d)
39. 
 (a) (b) (c) (d)
40. 
 (a) (b) (c) (d)

Directions (Qs. 41-45) : Each of the following questions consists of unmarked figures followed by four figures mark (a), (b), (c) and (d). Select a figure from the marked figures which will continue the series established by the unmarked figures.

41. Problem Figures



Answer Figures

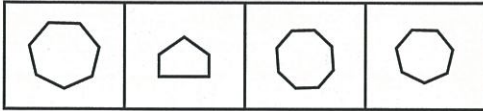


- (a) (b) (c) (d)

42. Problem Figures



Answer Figures



(a) (b) (c) (d)

43. Problem Figures

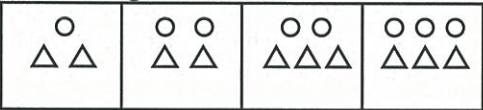


Answer Figures

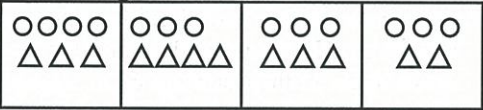


(a) (b) (c) (d)

44. Problem Figures



Answer Figures



(a) (b) (c) (d)

45. Problem Figures

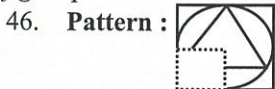


Answer Figures

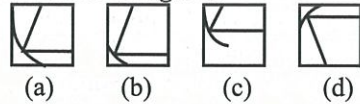


(a) (b) (c) (d)

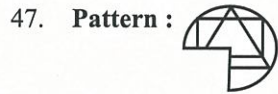
Directions (Qs. 46-50) : In each question, which one of the alternative figures will complete the given figure pattern?



Alternative figures



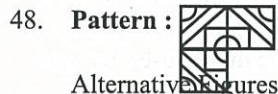
(a) (b) (c) (d)



Alternative figures



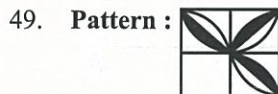
(a) (b) (c) (d)



Alternative figures



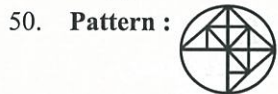
(a) (b) (c) (d)



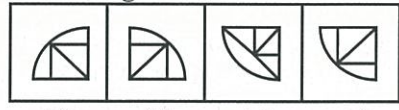
Alternative Figures



(a) (b) (c) (d)



Alternative Figures



(a) (b) (c) (d)

MATHEMATICS

Section-I

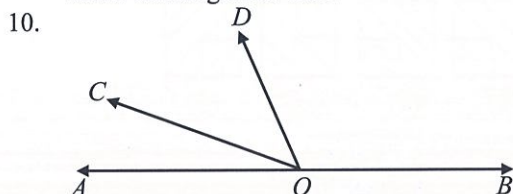
(Each question carries two marks.)

- What is the LCM of two numbers if their HCF is 2 and the product is 112?
- Write the Hindu-Arabic numerals for MDCL.
- John had $2\frac{1}{2}$ Cake. His friends ate $1\frac{2}{3}$ of the Cake. How much of the Cake is left?

4. The dimensions of a rectangular field are 36 m and 24 m. Find the cost of fencing of the field if cost of wire is ₹ 4.50 per meter.
5. Find the average of first 9 prime numbers.

6. Simplify : $\frac{1}{5} \div \frac{1}{5}$ of $\frac{1}{5}$
 $\frac{1}{5}$ of $\frac{1}{5} \div \frac{1}{5}$

7. A train covers 20 m in a second. Convert the speed of train in Km/h.
8. From the greatest and smallest 4 digit numbers with digits 9, 3, 7 and 1.
9. Mayank bought a ball for ₹ 20. He sold it for ₹30 and again bought it back for ₹ 40. Again he sold it for ₹ 50. Did he gain or lose? By how much did he gain or lose?



In the above figure if

$$\angle AOC = x$$

$$\angle COD = 2x$$

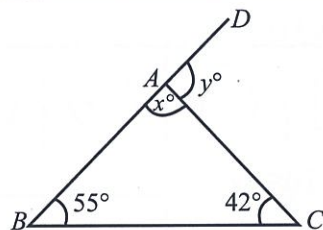
$$\angle BOD = 3x$$

Then find each angle in degree.

Section-II

(Each question carries three marks.)

11. Solve : $\frac{2}{7}$ of $[2 + \{2(11 + 4 - 2)\}] - 2$
12. What percent is 200 grams of 4.5 kg?
13. If the simple interest on ₹ 12800 for a period of 2 years is ₹ 3840, then find the rate of interest per annum.
14. If the circumference of a circular park is 88m, then find the area of the park.
15. Arrange the following in ascending order : $\frac{3}{7}, \frac{4}{5}, \frac{7}{9}, \frac{1}{2}$ and $\frac{3}{5}$.
16. Mohan, a student of Class-V secured 315 marks out of 450. Find marks in percentage.
17. In the given figure, what is the value of angles $BAC (x^\circ)$ and $CAD (y^\circ)$?

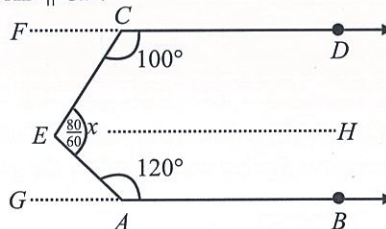


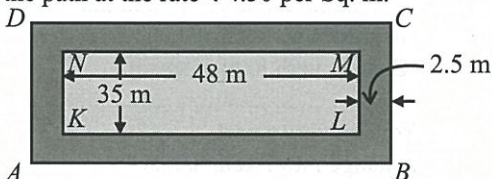
18. Sachin saved ₹ 400 each in the first and second months, ₹ 800 and ₹ 600 in the third and fourth months respectively. Find average monthly saving over the four months.
19. If average (mean) of the following marks obtained by students of Class-V is 35.
 26 45 37 43 49 20 x 22 and 30.
 Find unknown mark i.e. x.
20. Find : $1 - 2 + 3 - 4 + 5 - 6 + \dots + 19 - 20$.

Section-III

(Each question carries five marks.)

21. A rectangle and a square have the same perimeter 100 m. Find the side of the square if the rectangle has a breadth 2 m less than that of the square. Find breadth, length and area of the rectangle.
22. Rakesh completes one round of a running track in 8 minutes and Saroj completes it in 6 minutes. How long will it take for both to arrive again at their starting point together, if they start running at the same time and maintain their speed?
23. Akshita's dad needed a loan of ₹ 20,000 to buy a new car. Mr. Das, the Bank Manager agreed to give him the loan at 3% per annum. If the loan was to be paid back after 5 years, what total amount must he return to the bank?
24. Find the value of 'x' for following figure if $AB \parallel CD$.



25. A Supermarket sells 19 Oranges for ₹114, 6 Apples for ₹ 48, 22 Pomegranates for ₹ 154 and 17 Mangoes for ₹ 153. Which one of the fruits is the cheapest?
26. A rectangular grassy lawn measuring 48 m by 35 m is to be surrounded externally by a path, which is 2.5 m wide. Find the cost of leveling the path at the rate ₹ 4.50 per Sq. m.
- 
27. One number exceeds another number by 36. If sum of both number is 48. Find the numbers.
28. Find the smallest number, having four different prime factors.
29. What sum of money will produce ₹ 143 interest in $3\frac{1}{4}$ years at $2\frac{1}{2}\%$ simple interest?
30. A brick measures 20 cm by 10 cm by $7\frac{1}{2}$ cm. How many bricks will be required for a wall 25 m long, 2 m high and $\frac{3}{4}$ m thick?

LANGUAGE

1. Write 15 sentences on any one of the following topics— (15 Marks)
- My Favourite Sportsperson
 - Festivals of India
2. Read the following passage carefully and answer the questions that follow : (15 Marks)
- Ants are the most interesting of all insects because they are so like human beings in many ways. They live in families, build their own houses, and have a king and a 'queen'. Each ant has its own work to do and it does its work well. The very young ants who have just come out of their cocoons are generally the nurses. When they are older and their skins are harder, they are ready to leave the nest and do other kinds of work. Some of the ants hunt for food. Most other kinds of insects go about looking for food, but it is always for themselves alone. But the ants think of the nest. They bring in

food for the queen and other workers as well as for themselves.

- How are ants similar to human beings?
 - What jobs are done by the very young ants?
 - When do these very young ants leave the nest?
 - Which word in the passage conveys the meaning - "a cover that keeps someone safe and warm".
 - How are ants different from most other kinds of insects?
3. Make a sentence of your own for each underlined word given in the following passage. (Do not copy any sentence from the given paragraph.) (10 Marks)
- Laughter is indicative of joy. A man who **laughs** radiates **happiness** and wins friends. Laughter can be the best tonic. A man who cannot laugh fails to **attract** friends, loses his **health** and deprives himself of any **pleasure** of life.
-
 -
 -
 -
 -
4. Rearrange the jumbled words to form meaningful sentences. (10 Marks)
- newspapers/very important/day to day life/ in our/ have become
 - others/ at/ you/ not/ laugh/ should
 - smiles/ full of/ tears/ is/ life/ and
 - a/ standing/ the/ fox/ was/ clever/ tree/ under
 - the/ west/ in/ the/ sets/ sun
5. Give one word for the following : (5 Marks)
- A doctor who does operations
.....
 - A bunch of flowers
.....
 - A person who works with machines
.....
 - Happening once a year
.....
 - A house or shelter for a dog
.....

6. Choose the correct word/ phrase from the brackets and fill in the blanks : **(10 Marks)**
- He a new bicycle last week.
(bought, have bought, had bought)
 - It since early morning.
(rained, is raining, has been raining)
 - He TV most evening.
(is watch, watches, is watching)
 - I a lot of work today.
(do, have done, had done)
 - He fast when the accident happened. (is driving, was driving, drove)
7. Use each of the wrord in separate sentences of your own to show the difference in the meaning of the words of the pairs given below : **(10 Marks)**
- Dairy, Diary
 - There, Their
 - Tail, Tale
 - Peace, Piece
 - Weight, Wait
8. Write opposite words for the following : **(5 Marks)**
- Win
 - Refuse
 - Cruel
 - Ascending
 - Give
9. Change each of the following as directed : **(10 Marks)**
- It is going to rain.
(Change into Interrogative)
.....
 - Mr. Mukherji knows Chinese.
(Change into negative)
.....
 - He knows me well.
(Change verb to past tense)
.....
 - You are very smart.
(Change into Exclamatory)
.....
 - The cat killed the mouse.
(Change into Passive Voice)
.....
10. Your elder brother has sent you a birthday gift. Write a letter of Thanks to him. **(10 Marks)**

Solutions

INTELLIGENCE TEST

- Except Hate and Dislike, all others are opposite pair word.
- The given term is english alphabet and its position

		Latter	Position
B2A1D4	→	A	1
		B	2
		D	4
C3E5A1	→	C	3
		E	5
		A	1
H8B2D4	→	H	8
		B	2
		D	4

Hence, wrong term is R5A1T6.

- (Far, Near), (Last, First) and (High, Low) are pair of opposite words, whereas (Distance, Fare) are not opposite pair words.
- 'You', 'He' and 'She' are pronouns, whereas 'am' is a not a pronoun.
- Except '773' other three numbers are divisible by '3'.
- ENKAL → ANKLE → 4th letter is L.
- HCDNGRHAIA → CHANDIGARH → 4th letter is N.
- HEPES → SHEEP → 4th letter is L.
- NEGOAR → ORANGE → 4th letter is N.
- Lion roar Elephant - Trumpet, Snake - Hiss. But Dogs - bark.
- (Horse - Mare), (Dog - Bitch) and (Cock - Hen) are pair of opposite gender, whereas (Cow - Goat) is not pair of opposite gender.
- Uncle and Aunt are opposite words, similarly Cock is opposite to Hen.
- Table is made of wood, like that Coat is made of cloth.

- (Boy - Girl) are opposite pair word like that (Nephew - Neice) are opposite Pair word.

- Fish and submarine Swims in water, like that Bird and Aeroplane fly in sky.

- Study of Disease is called pathology, like that study of planet is called Astronomy.

- While waiting for too long, we get boredom, like that continuous education of any subject, we get enlightenment.

- We get light from Sun, like that we get heat from Fire.

- 246 357 468 579 690

- Putting English alphabet position as code A/2, 4/C, E/6, 8/G

- 1/2, 4/3, 5/6, 8/7

- 1243 2354 3465 4576

- C - 3 E - 6 G - 12 I - 24 K - 48 M - 96

- 3 6 8 16 18 36

- K P A L Q B M R C N S D O

- C H A I R F K D L U

$$\frac{7}{9} = 0.7$$

$$\frac{1}{2} = 0.5$$

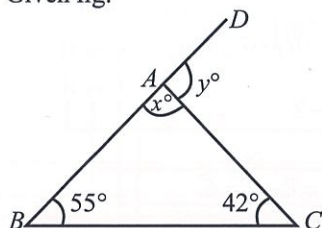
$$\frac{3}{5} = 0.6$$

$\therefore \frac{3}{7}, \frac{1}{2}, \frac{3}{5}, \frac{7}{9}, \frac{4}{5}$ are in ascending order.

16. Out of 450 marks Mohan got 315 marks.
Out of 100 marks Mohan got

$$= \frac{315}{450} \times 100 = 70\%.$$

17. Given fig.



In $\triangle ABC$,

$$x + 55^\circ + 42^\circ = 180^\circ$$

$$\Rightarrow x = 180^\circ - 97^\circ = 83^\circ$$

$$x + y = 180^\circ \text{ (linear pair)}$$

$$\therefore y = 180^\circ - 83^\circ = 97^\circ.$$

18. Average monthly saving

$$= \frac{400 + 400 + 800 + 600}{4}$$

$$= \frac{2200}{4} = ₹ 550.$$

19. Average (Mean) Marks

$$= \frac{x + 26 + 45 + 37 + 43 + 49 + 20 + 22 + 30}{9} = 35$$

$$\Rightarrow x + 272 = 35 \times 9 = 315$$

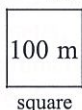
$$\Rightarrow x = 315 - 272 = 43.$$

20. $1 + 3 + 5 + 7 + 9 + 11 + 13 + 15 + 17 + 19$
 $-(2 + 4 + 6 + 8 + 10 + 12 + 14 + 16 + 18 + 20)$
 $= 100 - 110 = -10.$

21.

100 m

rectangle



Perimeter of square = perimeter of rectangle
 $= 100 \text{ m}$

$$\therefore \text{Side of square} = \frac{100}{4} = 25 \text{ m}$$

$$\text{Breadth of rectangle} = 25 - 2 = 23 \text{ m}$$

$$\text{Now, } 2(l + b) = 100$$

$$l + b = 50$$

$$\Rightarrow l + 23 = 50 \Rightarrow l = 27 \text{ m}$$

Length of rectangle = 27 m.

$$\therefore \text{Area of rectangle} = l \times b = 27 \times 23 = 621 \text{ m}^2.$$

22. L.C.M. of 8 and 6 = 24

$$\begin{array}{r|l} 2 & 8, 6 \\ \hline & 4, 3 \end{array}$$

$$\text{L.C.M.} = 2 \times 4 \times 3 = 24$$

Hence, both will arrive together after 24 min.

23. Loan amount, $P = ₹ 20,000$

Rate, $r = 3\%$

Time, $t = 5$ years

$$A = p \left(1 + \frac{r}{100} \right)^t$$

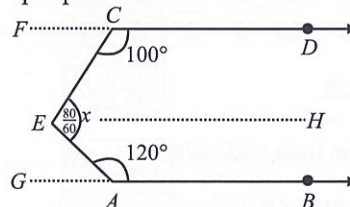
$$= 20000 \left(1 + \frac{3}{100} \right)^5$$

$$= 20000 \times \frac{103}{100} \times \frac{103}{100} \times \frac{103}{100} \times \frac{103}{100} \times \frac{103}{100}$$

$$= \frac{23184069486}{1000000} = 23184.069486$$

\therefore Required total amount paid = ₹ 23184.

24. On extending line AB upto point G and line CD upto point F .



$\therefore AB \parallel CD$

$$\therefore \angle FCE = 180^\circ - 100^\circ = 80^\circ$$

$$\text{and } \angle EAG = 180^\circ - 120^\circ = 60^\circ$$

$$\angle CEH = 80^\circ \text{ (alternate angle)}$$

$$\angle AEH = 60^\circ \text{ (alternate angle)}$$

$$\therefore x = 80^\circ + 60^\circ = 140^\circ$$

LANGUAGE

$$25. \text{ Cost of 1 Orange} = \frac{114}{19} = ₹ 6$$

$$\text{Cost of 1 Apple} = \frac{48}{6} = ₹ 8$$

$$\text{Cost of 1 Pomegranate} = \frac{154}{22} = ₹ 7$$

$$\text{Cost of 1 Mango} = \frac{153}{17} = ₹ 9$$

Hence, Orange is the cheapest fruit.

$$26. 48 \text{ m} + 5 \text{ m} = 53 \text{ m}$$

$$35 \text{ m} + 5 \text{ m} = 40 \text{ m}$$

$$\text{Area without path} = 48 \times 35 = 1680 \text{ m}^2$$

$$\text{Area with path} = 53 \times 40 = 2120 \text{ m}^2$$

$$\therefore \text{Area of path} = 2120 - 1680 = 540 \text{ m}^2$$

$$\begin{aligned} \text{Cost of leveling the path} &= 540 \times \frac{9}{2} \\ &= 270 \times 9 = ₹ 2430. \end{aligned}$$

$$27. \text{ Let one number} = x$$

$$\therefore \text{Other number} = x + 36$$

$$x + x + 36 = 48$$

$$\Rightarrow 2x = 48 - 36 = 12$$

$$\Rightarrow x = 6, x + 36 = 6 + 36 = 42$$

\therefore Numbers are 6 and 42.

$$28. \text{ Required number} = 2 \times 3 \times 5 \times 7 = 210. \text{ Here number 210 have four prime factors 2, 3, 5, 7.}$$

$$\begin{aligned} 29. \text{ Sum, } P &= \frac{S.I. \times 100}{R \times T} = \frac{143 \times 100}{\left(\frac{13}{4}\right) \times \left(\frac{5}{2}\right)} \\ &= 88 \times 20 = ₹ 1760. \end{aligned}$$

$$30. \text{ Volume of Wall} = l \times b \times h$$

$$= 2500 \times 200 \times \frac{3}{4} \times 100$$

$$= 2500 \times 150 \times 100 \text{ cm}^3$$

$$\text{Volume of each brick} = l \times b \times h$$

$$= 20 \times 10 \times \frac{15}{2}$$

$$= 1500 \text{ cm}^3$$

\therefore Number of bricks

$$= \frac{2500 \times 150 \times 100}{1500} = 25000.$$

1. (b) **Festivals of India**

India is a land of festivals. The most famous festival in the Christian world is Christmas. The Mohammedans observe Id-ul-Fitr as one of their most important festivals. In India the most famous festival is the Diwali which though chiefly a Hindu festival, is celebrated by other communities also because of their beliefs. Diwali comes in October or November. The Dussehra which precedes the Diwali by twenty days is another famous festival which is celebrated all over India. Holi which comes in February or March, is also celebrated all over India, but most vehemently in North India. Baisakhi which often comes off on 13th April, marks the beginning of harvest season and advent of the Hindu new Calendar. The harvest festival of Kerala is Onam which comes off in September. In Tamil Nadu, Pongal is the harvest festival which comes off in September. There are other festivals like Pushkar Mela at Pushkar in Rajasthan. It is celebrated in November. Vishwakarma Day is celebrated by the artisans on the day next to Diwali. Desert Festival is celebrated at Jaisalmer in Rajasthan during February. Surajkund Crafts Mela is held in Haryana in the same month i.e., February. There are Gurpurbs celebrated by the Sikhs. Similarly there are other festivals like Lohari, Basant, etc., and social days for other communities. There are also celebrations on more or less scale on days like Purnima, Amavas, Ekadashi, etc. In Kashmir we have the famous Amarnath Yatra and "Chhari Mubarak" March.

2. (a) Because they live in families, build their own houses, and do work like human beings.
- (b) The very young ants do the jobs of nurses.
- (c) When they are older and their skins are harder, then they leave the nest.
- (d) Cocoon
- (e) Ant collect food for other ants also while most other kinds of insect do it just for themselves only.

3. (a) Never laugh at poor and deprived people.
 (b) Laughter is a sign of happiness.
 (c) Those who laugh often, attract more friends.
 (d) Laughter also improves the health.
 (e) Laughter, happiness and, pleasure are good for healthy life.
4. (a) Newspaper have become very important in our day to day life.
 (b) You should not laugh at others.
 (c) Life is full of tears and smiles.
 (d) The clever fox was standing under a tree.
 (e) The sun sets in the west.
5. (a) Surgeon
 (b) Bouquet
 (c) Engineer, Mechanic, Machinist
 (d) Annual
 (e) Kennel
6. (a) bought (b) has been raining
 (c) watches (d) have done
 (e) was driving
7. (a) We go to Mother Dairy to fetch milk.
 I maintain a daily dairy for record.
 (b) There is a snake in the grass.
 Their car broke down on the way.
 (c) The dog was wagging its tail.
 He narrated a long tale of a king.
- (d) All religions teach us to live in peace.
 I also ate a piece of cake there.
- (e) Your body weight should be normal.
 After a long wait I left the place.
8. (a) Lose (b) Accept
 (c) Kind (d) Descending
 (e) Take
9. (a) Is it going to rain?
 (b) Mr. Mukherji doesn't know Chinese.
 (c) He knew me well.
 (d) How smart!
 (e) The mouse was killed by the cat.
10. Examination Hall
 New Delhi
 6 March,
 My dear Brother,
 I thank you very much for the watch that you have just sent as my birthday gift. It is really a beautiful watch. It keeps correct time. I will never be late for school now. My friends also like it very much.
 I request you to attend my birthday party in person the next year. Don't forget to bring the kids.
 Your affectionate brother,
 XYZ.

INTELLIGENCE TEST

- Choose the missing term out of the given alternatives.
DE, HI, LM?
(a) PQ (b) TU (c) WX (d) KP
- If the first three letters of the word COMPREHENSION are reversed, then the last three letters are added and then the remaining letters are reversed and added, then which letter will be exactly in the middle?
(a) H (b) N (c) R (d) S
- In the following questions, a group of letters is given which are numbered 1, 2, 3, 4, 5 and 6. Below are given four alternatives containing combinations of these numbers. Select that combination of numbers so that letters arranged accordingly form a meaningful word.
I P E L O C
1 2 3 4 5 6
(a) 1, 4, 3, 5, 2, 6 (b) 2, 5, 4, 1, 6, 3
(c) 3, 4, 5, 1, 2, 6 (d) 4, 5, 1, 2, 3, 6
- In the following question, four pairs of words are given out of which the words in three pairs bear a certain common relationship. Choose the pair in which the words are differently related.
(a) Bottle : Wine (b) Cup : Tea
(c) Pitcher : Water (d) Ball : Bat
- Find the wrong term in the given series?
2, 12, 32, 63, 102
(a) 12 (b) 32 (c) 63 (d) 102

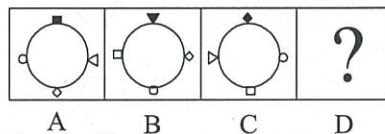
DIRECTIONS (Qs. 6-7) : In each question, there are four terms in each question. The terms right to symbol :: have same relationship as the term of the left to symbol ::. Out of the four, one term is missing which is one of the four alternatives given below. Find out the correct alternatives.

- UVST : WTUR :: ? : RILO
(a) PKJQ (b) TSUV
(c) UVTS (d) TSVU
- Race : Fatigue :: Fast : ?
(a) Food (b) Appetite
(c) Hunger (d) Weakness

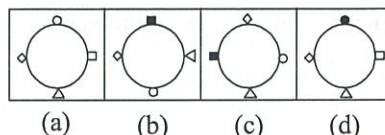
- Find the code of the word given in the following equation.
If DRIVER = 7 and CAR = 4, then BOOK = ?
(a) 5 (b) 8 (c) 12 (d) 14
- In a certain code language, 'ne ri so' means 'good rainy day' 'si ne po' means 'day is wonderful' and 'ri jo' means 'good boy'. Which of the following means 'rainy' in the code?
(a) ne (b) si (c) ri (d) so
- In a class of 43 students. Sarita is at 27th position from the top. What is her rank from the other side?
(a) 16th (b) 17th (c) 15th (d) 21th

DIRECTIONS (Qs. 11-12) : These series are based on mixed operations in which various figures change their directions/positions, increase or decrease in number as well as change qualitatively. The problem is that the figure contains several separate figures and a blank space. The answer choices are four numbered figures marked a, b, c, d. You have to choose one of the answer figures which should replace the question mark or appropriately fit in the blank space given in the problem figure.

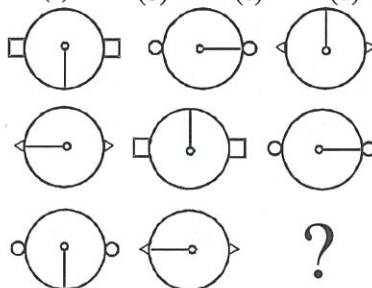
11. Question figures:

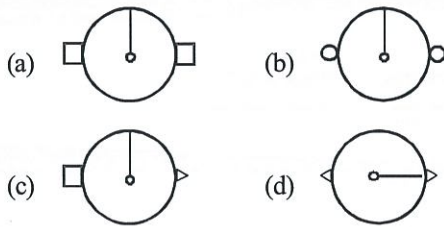


Answer figures:



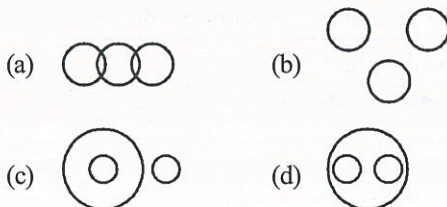
12.



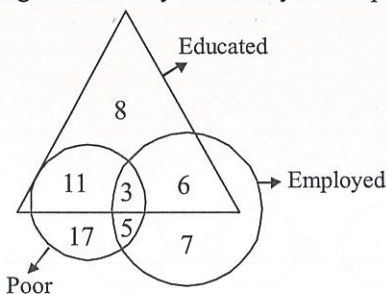


DIRECTIONS (Qs. 13-14) : S and R are brothers. T is daughter of S. U is the spouse of R and mother of Q. P is the daughter of V, who is the spouse of T.

13. Who is the grandfather of P ?
(a) U (b) S (c) R (d) V
14. Who is the cousin of Q ?
(a) T (b) V (c) R (d) P
15. In the following question, three statements of numbers following same rules are given. Find the rule and accordingly find the value of the number. If $213 = 419$; $322 = 924$; $415 = 16125$, then $215 = ?$
(a) 425 (b) 1625 (c) 4125 (d) 2541
16. Six persons are sitting in a circle. 'J' is between 'N' and 'O'; 'N' is opposite 'M'; and 'L' is not in either of the neighbouring seats of 'N'. Who is opposite to 'K' ?
(a) M (b) O (c) J (d) L
17. Which one of the following diagrams best depicts the relationship among Mammals, Cows and Crows ?



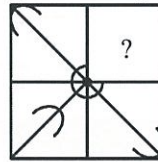
18. The figure represents three classes of youth in a village. How many educated youth is poor?



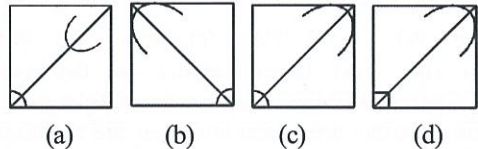
- (a) 14 (b) 9 (c) 6 (d) 19

DIRECTION (Q. 19) : Which answer figure completes the pattern given in the question figure?

Question Figure :



Answer Figures :

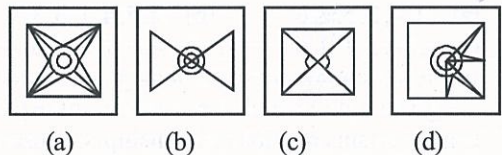


DIRECTION (Q. 20) : In the following question, select the answer figure in which the question figure is hidden/embedded.

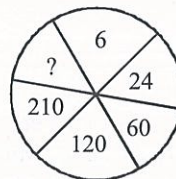
Question Figure :



Answer Figures :



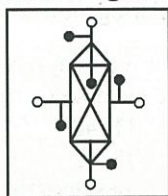
DIRECTION (Q. 21) : In the following question, select the missing number from the given responses.



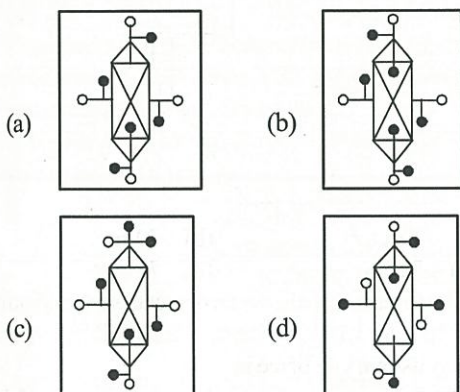
- (a) 330 (b) 336 (c) 428 (d) 420
22. A boy running towards South, turns to his right and runs. Then he turns to his right and finally turns to his left. Towards which direction is he running now?
(a) East (b) West (c) South (d) North
 23. If '+' means 'x', '-' means '÷', 'x' means '-' and '÷' means '+', then what will be the value of $16 \div 64 - 8 \times 4 + 2$?
(a) 12 (b) 24 (c) 16 (d) 18

24. If the mirror is placed on the line LM, then which of the answer figures is the right image of the given question figure?

Question Figure :



Answer Figures :



25. Pointing to a photograph of a boy Vinay said, "He is the son of the only son of my mother." How is Vinay related to that boy?
(a) Brother (b) Uncle (c) Cousin (d) Father

MATHEMATICS

26. A number, when divided by 114, leaves remainder 21. If the same number is divided by 19, then the remainder will be
(a) 1 (b) 2 (c) 7 (d) 17
27. Buses start from a bus terminal with a speed of 20 km/hr at intervals of 10 minutes. What is the speed of a man coming from the opposite direction towards the bus terminal if he meets the buses at intervals of 8 minutes?
(a) 3 km/hr (b) 4 km/hr
(c) 5 km/hr (d) 7 km/hr
28. By walking at $\frac{3}{4}$ of his usual speed, a man reaches his office 20 minutes later than his usual time. The usual time taken by him to reach his office is
(a) 75 minutes (b) 60 minutes
(c) 40 minutes (d) 30 minutes
29. Two natural numbers are in the ratio 3 : 5 and their product is 2160. The smaller of the numbers is
(a) 36 (b) 24 (c) 18 (d) 12
30. The sum of four numbers is 48. When 5 and 1 are added to the first two; and 3 & 7 are subtracted from the 3rd & 4th, the numbers will be equal. The numbers are
(a) 4, 12, 12, 20 (b) 5, 11, 13, 19
(c) 6, 10, 14, 18 (d) 9, 7, 15, 17
31. Krishna purchased a number of articles at ₹10 for each and the same number for ₹14 each. He mixed them together and sold them for ₹13 each. Then his gain or loss percent is
(a) Loss $8\frac{1}{3}\%$ (b) Gain $8\frac{2}{3}\%$
(c) Loss $8\frac{2}{3}\%$ (d) Gain $8\frac{1}{3}\%$
32. The average age of a jury of 5 is 40. If a member aged 35 resigns and a man aged 25 becomes a member, then the average age of the new jury is
(a) 30 (b) 38 (c) 40 (d) 42
33. The areas of three consecutive faces of a cuboid are 12 cm^2 , 20 cm^2 and 15 cm^2 , then the volume (in cm^3) of the cuboid is
(a) 3600 (b) 100 (c) 80 (d) 60
34. The ratio in which a man must mix rice at ₹10.20 per kg and ₹14.40 per kg so as to make a mixture worth ₹12.60 per kg, is
(a) 3 : 4 (b) 4 : 3 (c) 2 : 5 (d) 18 : 24
35. A certain amount of money is divided among x, y and z. If x receives 25% more than y and y receives 25% less than z, then x : y : z is equal to
(a) 12 : 10 : 11 (b) 14 : 12 : 13
(c) 15 : 12 : 16 (d) 10 : 9 : 12
36. Monthly incomes of A and B are in the ratio of 4 : 3 and their expenses bear the ratio 3 : 2. Each of them saves ₹6,000 at the end of the month, then the monthly income of A is
(a) ₹12,000 (b) ₹24,000
(c) ₹30,000 (d) ₹60,000
37. The average of 100 observations was calculated as 35. It was found later, that one of the observation was misread as 83 instead of 53. The correct average is:
(a) 32.7 (b) 34.7 (c) 35.7 (d) 36.7
38. If 5 men or 7 women can earn ₹5,250 per day, how much would 7 men and 13 women earn per day?
(a) ₹11,600 (b) ₹11,700
(c) ₹16,100 (d) ₹17,100

73. Which of the following state(s) contribute(s) less than 10 per cent in the total rose production?
 (a) Only Rajasthan
 (b) Rajasthan, Karnataka
 (c) Rajasthan, Karnataka, Haryana
 (d) Rajasthan, Karnataka, Haryana and Gujarat
74. What is the approximate average production of roses (in thousands) across all the states?
 (a) 21 (b) 20
 (c) 19 (d) 18
75. If total percentage contribution of the states having production of roses below twenty thousand is considered, which of the following statements is true?
 (a) It is little above 40%
 (b) It is exactly 35%
 (c) It is below 35%
 (d) None of these

LANGUAGE TEST

DIRECTIONS (Qs. 76-80): Choose the best option to complete each sentence.

76. The _____ that I want to read from the book includes a description of the fall of the Roman Empire.
 (a) example (b) excerpt
 (c) words (d) books
77. He was caught _____ book from the shop.
 (a) packing (b) gifting
 (c) eating (d) pilfering
78. After the wrestling match, the wrestler had run out of steam. He was _____.
 (a) more energised
 (b) completely out of energy
 (c) fuming with anger
 (d) in a mood to conciliate
79. It proved to be a great _____ experience for Brian.
 (a) teaching (b) learning
 (c) picking (d) trying
80. The reporter provided a/an _____ account of the whole incident.
 (a) dramatic (b) arbitrary
 (c) detailed (d) enthusiastic

DIRECTIONS (Qs. 81-83): Choose the antonym of the underlined word in each sentence.

81. Affluence and illiteracy are two of the greatest social evils.
 (a) Cheap (b) Poverty
 (c) Paucity (d) Dusk
82. He is quite agile.
 (a) aged (b) dull
 (c) active (d) young
83. He was very curt to me.
 (a) rude (b) brief
 (c) argumentative (d) polite

DIRECTIONS (Qs. 84-85): Choose the most appropriate option to fill the blanks.

84. A government run by a dictator is known as _____.
 (a) oligarchy (b) autocracy
 (c) mobocracy (d) plebiscite
85. A person in charge of a museum is called a _____.
 (a) museologist (b) curator
 (c) museogist (d) mercenary

DIRECTIONS (Qs. 86-89): Select the option that changes given sentences into passive form.

86. The earthquake destroyed the building.
 (a) The building was destroyed by the earthquake.
 (b) The earthquake was the destroyer of the building.
 (c) The building got destroyed by the earthquake.
 (d) The earthquake got the building destroyed.
87. He makes mats.
 (a) He is making mats.
 (b) He has made mats.
 (c) Mats are made by him.
 (d) He has been making mats.
88. The manager has given her a notice.
 (a) The manager will give her a notice.
 (b) She will get a notice by the manager.
 (c) The manager has been given a notice by her.
 (d) She has been given a notice by her manager.
89. The teacher did an experiment.
 (a) An experiment was done by the teacher.
 (b) The teacher is doing an experiment.
 (c) The teacher has done an experiment.
 (d) The teacher has doing experiments.

DIRECTIONS (Qs. 90-94): Read the passage given below and answer the questions that follow.

Buddhism, as a religion, gained prominence in the ancient kingdom of Magadha (now in Bihar). It was based on the teachings of Siddhartha Gautama, who was deemed as "Buddha" ("Awakened One"). Even though the practice of Buddhism, as a distinct and organised religion, lost influence after the Gupta reign and declined from the land of its origin, it continued to prosper in several parts of South Asia located at the crossroads of significant routes; Bamiyan emerged as a major hub for Buddhist activities. The artistic and architectural remains of Bamiyan valley are a testimony to the interchange of Indian, Hellenistic, Roman and Sasanian influence as the basis for the development of a particular artistic expression on the Gandharan School. The region exemplified a cultural landscape and a significant period in Buddhism. The Buddha statues of Bamiyan coexisted with numerous stupas; scattered in the Afghan mountains were built to house relics of the Buddha and later saints.

The statues were destroyed by dynamites over several weeks, starting on March 2, 2001. Initially, the statues were fired at for several days using anti-aircraft guns and artillery. This caused severe damage, but did not topple them. Later, the Taliban placed anti-tank mines at the bottom, so that when fragments of rock broke off from artillery fire, the statues would crumble. In 2003, the UNESCO declared the valley a world heritage site and archaeologists flocked to it. What they found were two enormous empty caverns and a pile of debris littered with unexploded mines.

90. Which of the following is false?

- (a) Buddhism lost its influence after the Gupta reign.
- (b) It prospered in several parts of South Asia.
- (c) Stupas were built to house the travellers.
- (d) Bamiyan emerged as a major hub of Buddhist activities.

91. What method was used to destroy the statues?

- (a) Dynamite
- (b) Anti-tank mines
- (c) Anti-aircraft guns
- (d) All of these

92. What do you understand by artillery?

- (a) Tanks
- (b) Munitions
- (c) Heavy weaponry
- (d) Army

93. What did the archaeologists discover at Bamiyan?

- (a) Buddha statues
- (b) Empty caverns and debris
- (c) Mines
- (d) Relics of Buddha and later saints

94. What is the meaning of caverns?

- (a) Tunnel
- (b) Corridor
- (c) Gallery
- (d) A small cave

DIRECTIONS (Qs. 95-97): Directions: In each of the question part, find out which part has an error. If there is no mistake, the answer is 'No error'.

- 95. (a) The poor
- (b) is oppressed
- (c) All around the world
- (d) No error.
- 96. (a) Mohan and me are
- (b) going to learn
- (c) many tricks
- (d) No error
- 97. (a) We shan't
- (b) invite them.
- (c) won't we?
- (d) No error

DIRECTIONS (Qs. 98-100): in the following questions four alternatives are given for idioms/phrases. Choose the one that best expresses the meaning of the given idiom/phrase.

98. What is the meaning of Idiom – 'Get into hot water'?

- (a) To swim in the deep water
- (b) To think over difficult problem
- (c) To get into difficult situation
- (d) To discuss a burning topic

99. What is the meaning of Idiom—'rain cats and dogs'?

- (a) Rain heavily
- (b) To fight in rain
- (c) Cats and dogs fight
- (d) Rain water wastage

100. What is the meaning of Idiom—'at daggers drawn'?

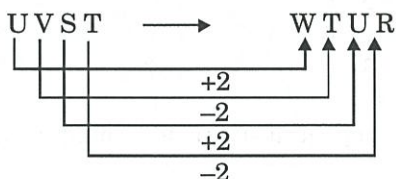
- (a) To throw daggers
- (b) To be bitterly hostile
- (c) To be confused
- (d) To think deeply

GENERAL KNOWLEDGE

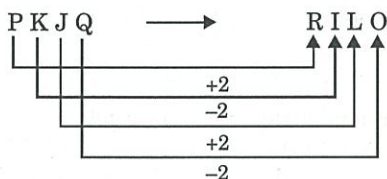
101. Who among the following writer of the Mother India Book?
(a) Hans Aanrud (b) Katherine Mayo
(c) Rachel Aaron (d) Ben Aaronovitch
102. Mallet term is related to which sports?
(a) Cricket (b) Tennis
(c) Hockey (d) POLO
103. Who among the following first person to take hat-trick in a WorldCup?
(a) Chetan Sharma (b) Hardik Pandya
(c) Md. Shami (d) Jasprit Bumrah
104. Capital of Barbados?
(a) Andorra la Vella (b) Manama
(c) Bridge town (d) Nassau
105. How many number of bodies in UNO?
(a) Two (b) Four
(c) Six (d) Seven
106. Who among the following introduced preamble in constituent Assembly?
(a) Dr. B R Ambedkar
(b) Dr. Rajendra Prasad
(c) Sardar Ballabh Bhai Patel
(d) Jawahar Lal Nehru
107. Irani Cup is related to which of the game ?
(a) Badminton (b) Football
(c) Hockey (d) Cricket
108. Tropic of Cancer does not pass through which country?
(a) Iran (b) India
(c) Algeria (d) Egypt
109. Metallic coin first used in India in?
(a) Bihar and eastern U.P.
(b) Southern India
(c) Western India
(d) Central India
110. Cryolite is mainly found in which country ?
(a) Canada (b) Iceland
(c) Green land (d) Norway
111. Retreating monsoon occurs during which month?
(a) November (b) September
(c) October (d) December
112. Dr. M.S. Subbulakshmi related with?
(a) Hindustani Music
(b) Dhrupad
(c) Kathak
(d) Carnatic Classical Music
113. Which case Ram Prasad Bismil related?
(a) Alipore conspiracy (b) Kakori conspiracy
(c) Kanpur conspiracy (d) Meerut conspiracy
114. Akbar Buland Darwaza victory over?
(a) Gujarat (b) Asirgarh fort
(c) Panipat Battle (d) Chittorgarh fort
115. What is the capital of Ghana?
(a) Tirana (b) Tbilisi
(c) Accra (d) Addis Ababa
116. Which of the following Mountain passes are not in India?
(a) Rohtang Pass (b) Khyber Pass
(c) Baralachala Pass (d) Lipulekh Pass
117. Who wrote the book Gone with the Wind?
(a) Anand Neelakantan
(b) Gita Sahgal
(c) Douglas Noel Adams
(d) Margaret Mitchell
118. Nautical Mile is unit of?
(a) Mass (b) Work
(c) Length (d) Energy
119. Dravidian Art associated with?
(a) Sangam period (b) Mughal Period
(c) Gupta Period (d) Maurya Period
120. Where is Unido Headquarters?
(a) New York (b) Brussels
(c) Vienna (d) Rome
121. How many players are there in kabaddi?
(a) Six (b) Eleven
(c) Five (d) Seven
122. Which rivers flow into the Arabian Sea?
(a) Ganga (b) Narmada
(c) Tapi (d) Both b & c
123. _____ is the current Chief Minister of Karnataka .
(a) B. S. Yediyurappa
(b) H. D. Kumaraswamy
(c) Siddaramaiah
(d) V. Sadananda Gowda
124. Who is Governor of Punjab?
(a) Padmanbha Acharya (b) Nitish Kumar
(c) Raman Singh (d) V.P. Singh Badnore
125. Which is the first state in India to make its public schools completely digital?
(a) Maharashtra (b) Andhra Pradesh
(c) Kerala (d) Gujarat

HINTS & EXPLANATIONS

- (a) First letter : +4, +4, +4, +4, etc.
Second letter: +4, +4, +4, +4
- (d) Clearly, we have :
COMPREHENSION
→ (COM) (PREHENS) (ION)
→ MOCIONSNEHERP
The middle letter is the seventh letter, which is S.
- (b) POLICE
- (d) In all other pairs, first is used to hold the second.
- (c) If 63 is changed to 62, differences become 10, 20, 30, 40 which is a pattern of uniform increase.
- (a) As,

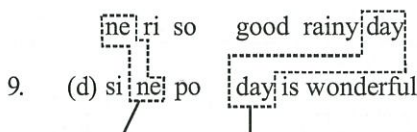


In the same way,

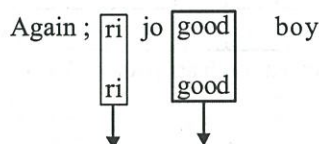


∴ ? = PKJQ

- (c) Race causes fatigue and fast causes hunger.
- (a) Just add '1' in the total number of each word viz, DRIVER is formed of six letters hence $6 + 1 = 7$, So, code of Book is $4 + 1 = 5$ etc.



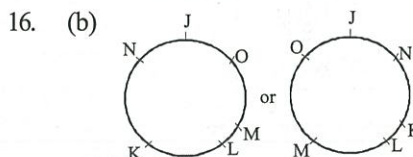
ne is common day is common
⇒ ne means day



ne so rainy day
ri is common, good is common
⇒ ri mean good.

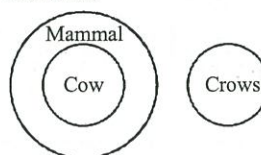
Thus, so means rainy.

- (b) Sarita rank from the bottom = $(43 + 1) - 27 = 17$.
- (d) In each step, the center smaller element moves 90° ACW and topmost element gets shaded.
- (a) Ears alternate in shape between horizontal and diagonal positions, shading in the larger circles is vertical to the right and horizontal at the top.
- (b) P is the daughter of V, who is spouse of T. T is the daughter of S. So, T is the mother and V is the father of P. Therefore, S is the grandfather of P.
- (a) R and S are brother Q is the child of R and T is the child of S. So, cousin of Q. is T.
- (c) The rule is: $2 \ 1 \ 3 = 2^2 \ 1 \ 3^2 = 4 \ 1 \ 9$; $3 \ 2 \ 2 = 3^2 \ 2 \ 2^2 = 9 \ 2 \ 4$;
 $4 \ 1 \ 5 = 4^2 \ 1 \ 5^2 = 16 \ 1 \ 25$
∴ $2 \ 1 \ 5 = 2^2 \ 1 \ 5^2 = 4 \ 1 \ 25$



Hence, O is the opposite of K.

- (c) Crows come under the class Aves. Cow is a mammal.



18. (a)

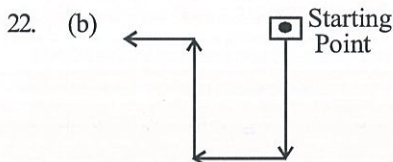
Persons	Numbers						
	3	5	6	7	8	11	17
Educated	✓	×	✓	×	✓	✓	×
Employed	✓	✓	✓	✓	×	×	×
Poor	✓	✓	×	×	×	✓	✓

Number of educated youth are poor = $11 + 3 = 14$

19. (c) 20. (a)

21. (b)

$$\begin{array}{llll}
 6 + 18 = 24 & \rightarrow \text{Here } 18 = 6 \times 3 & \leftarrow +3 \\
 24 + 36 = 60 & \rightarrow \text{Here } 36 = 6 \times 6 & \leftarrow +4 \\
 60 + 60 = 120 & \rightarrow \text{Here } 60 = 6 \times 10 & \leftarrow +5 \\
 120 + 90 = 210 & \rightarrow \text{Here } 90 = 6 \times 15 & \leftarrow +6 \\
 210 + 126 = \boxed{336} & \rightarrow \text{Here } 126 = 6 \times 21 &
 \end{array}$$

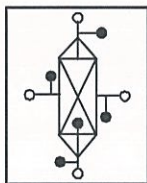
23. (c) $16 \div 64 - 8 \times 4 + 2$

$$\Rightarrow 16 \div 64 \div 8 - 4 \times 2$$

$$\Rightarrow 16 \div 8 - 4 \times 2$$

$$\Rightarrow 16 \div 8 - 8 = 16$$

24. (a) In water image upside becomes downside.



25. (d) Vinay is the father of boy.

26. (b) If the first divisor is a multiple of second divisor.

Then, remainder by the second divisor.

$$\therefore \text{Remainder} = 21 \div 19 = 2$$

27. (c) Distance covered in 10 minutes at 20 kmph = distance covered in 8 minutes at $(20 + x)$ kmph

$$\Rightarrow 20 \times \frac{10}{60} = \frac{8}{60} (20 + x)$$

$$\Rightarrow 200 = 160 + 8x$$

$$\Rightarrow 8x = 40$$

$$\Rightarrow x = \frac{40}{8} = 5 \text{ kmph}$$

28. (b) $\frac{4}{3}$ of usual time = Usual time + 20 minutes

$$\therefore \frac{1}{3} \text{rd of usual time} = 20 \text{ minutes}$$

$$\therefore \text{Usual time} = 20 \times 3 = 60 \text{ minutes}$$

29. (a) Let the numbers be $3x$ and $5x$.

$$\therefore 3x \times 5x = 2160$$

$$\Rightarrow x^2 = \frac{2160}{3 \times 5} = 144 = 12 \times 12$$

$$\Rightarrow x = 12$$

$$\therefore \text{Smaller number} = 3x = 3 \times 12 = 36$$

30. (c) Let four numbers are a, b, c, d , then

$$a + b + c + d = 48 \quad \dots(i)$$

$$\text{and } a + 5 = b + 1 \quad \dots(ii)$$

$$\text{or, } a = b - 4 \quad \dots(iii)$$

$$\text{and } c - 3 = d - 7 \quad \dots(iv)$$

$$c = d - 4 \quad \dots(v)$$

Substituting equation (iii) and (v) in equation (i) we get

$$b - 4 + b + d - 4 + d = 48$$

$$b + d = 28 \quad \dots(vi)$$

But we know,

$$b + 1 = d - 7$$

$$\therefore b = d - 8$$

Substituting in equation (vi) we get

$$d - 8 + d = 28$$

$$d = 18$$

Solving this way we get $a = 6, b = 10, c = 14$ and $d = 18$ 31. (a) Average cost of = $\frac{10+14}{2} = 12$

$$QP = 13$$

$$P\% = \frac{13-12}{12} \times 100 = 8\frac{1}{3}$$

32. (b) Required average

$$= \frac{40 \times 5 - 35 + 25}{5} = \frac{190}{5} = 38 \text{ years}$$

33. (d) If the length, breadth and height of the cuboid be x , y and z cm respectively, then

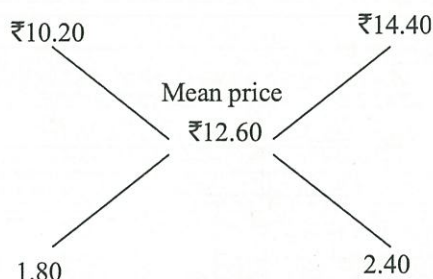
$$xy = 12; yz = 20; zx = 15$$

$$\therefore x^2 y^2 z^2 = 12 \times 20 \times 15 = 3600 \text{ cm}^6$$

$$\therefore v = xyz = \sqrt{3600} = 60 \text{ cm}^3$$

34. (a) By the rule of alligation:

Cost of 1 kg rice of 1st kind Cost of 1 kg rice of 2nd kind



$$\therefore \text{Required ratio} = 1.80 : 2.40 = 3 : 4.$$

35. (c) $x = x + \frac{125}{100}y$ or $\frac{x}{y} = \frac{5}{4}$ or $x : y = 5 : 4$

$$y = \frac{75}{100}z \text{ or } \frac{y}{z} = \frac{3}{4} \text{ or } y : z = 3 : 4$$

$$\begin{array}{r} x : y : z \\ 5 : 4 : 3 \\ \hline 15 : 12 : 16 \end{array}$$

Then, $x : y : z$ is equal to 15 : 12 : 16

36. (b) Let salary of A and B be $= 4x$ and $3x$
expenditure = income - salary

ATQ

$$\frac{4x - 6000}{3x - 6000} = \frac{3}{2}$$

$$8x - 12000 = 9x - 18000 \Rightarrow x = 6000$$

$$\text{A's salary} = 4x = 4 \times 6000 = 24000$$

37. (b) Average of difference

$$= \frac{83 - 53}{100} = \frac{30}{100} = 0.3$$

$$\text{Correct Average} = 35 - 0.3 = 34.7$$

38. (d) 5 men \equiv 7 women

$$\therefore 7 \text{ men} \equiv \frac{7}{5} \times 7 = \frac{49}{5} \text{ women}$$

$$\therefore 7 \text{ men} + 13 \text{ women}$$

$$= \frac{49}{5} + 13 = \frac{114}{5} \text{ women}$$

Now,

$$\therefore 7 \text{ women} \equiv ₹5250$$

$$\therefore \frac{114}{5} \text{ women}$$

$$\equiv \frac{5250}{7} \times \frac{114}{5} = ₹17100$$

39. (c) (B + C)'s 2 days' work

$$= 2 \left(\frac{1}{20} + \frac{1}{30} \right) = 2 \left(\frac{3+2}{60} \right) = \frac{1}{6} \text{ part}$$

$$\text{Remaining work} = 1 - \frac{1}{6} = \frac{5}{6} \text{ part}$$

\therefore Time taken by A to complete this part of work

$$= \frac{5}{6} \times 18 = 15 \text{ days}$$

40. (a) Rate = 10% per annum = 5% half yearly

$$A = P \left(1 + \frac{R}{100} \right)^T$$

$$\Rightarrow 926.10 = 800 \left(1 + \frac{5}{100} \right)^T$$

$$\Rightarrow \frac{9261}{8000} = \left(\frac{21}{20} \right)^T$$

$$\Rightarrow \left(\frac{21}{20} \right)^3 = \left(\frac{21}{20} \right)^T$$

$$\therefore \text{Time} = 3 \text{ half years} = 1\frac{1}{2} \text{ years}$$

41. (d) $\frac{A \times 60}{100} = B \times \frac{3}{4}$

$$\Rightarrow A \times \frac{3}{5} = B \times \frac{3}{4}$$

$$\Rightarrow \frac{A}{B} = \frac{3}{4} \times \frac{5}{3} = 5 : 4$$

42. (a) It is given that the remainder is 25 in each case when we divide 1305, 4665 and 6905 by K. So, subtracting 25 from each of the numbers, we get 1280, 4640 and 6880.

$$\text{HCF}(1280, 4640 \text{ and } 6880) = 160$$

So the greatest number is 160.

$$\therefore K = 160$$

$$\text{Sum of its digits} = 1 + 6 + 0 = 7$$

So, the answer is 7.

43. (b) Let the desired angle be x°

$$\text{Its complement} = (90 - x)$$

$$\text{Its supplement} = (180 - x)$$

Now, according to question

$$6(90 - x) = 2(180 - x) - 12$$

$$\Rightarrow 3(90 - x) = 180 - x - 6$$

$$\Rightarrow 270 - 3x = 174 - x$$

$$\Rightarrow 3x - x = 270 - 174$$

$$\Rightarrow 2x = 96$$

$$\Rightarrow x = 48^\circ$$

44. (b)
$$\begin{array}{ccccccc} 240 & 240 & 120 & 40 & 10 & 2 \\ \uparrow & \uparrow & \uparrow & \uparrow & \uparrow & \uparrow \\ \times 1 & \times 2 & \times 3 & \times 4 & \times 5 \end{array}$$

45. (b) Let the required number be x .

We have,

$$\frac{3x}{4} - \frac{3x}{14} = 150$$

$$\frac{21x - 6x}{28} = 150$$

$$x = \frac{150 \times 28}{15} = 280.$$

46. (b)
$$\sqrt{0.04 \times 0.4 \times a}$$

$$= 0.4 \times 0.04 \times \sqrt{b}$$

 Squaring both sides,

$$0.04 \times 0.4 \times a = (0.4)^2 \times (0.04)^2 \times b$$

$$\frac{b}{a} = \frac{0.04 \times 0.4}{0.04 \times 0.04 \times 0.4 \times 0.4}$$

$$\frac{b}{a} = \frac{1}{0.04 \times 0.4}$$

$$\frac{b}{a} = \frac{1000}{16}$$

$$\frac{b}{a} = \frac{125}{2}$$

47. (a) Let the ratio be k

$$\therefore a + b = 6k, b + c = 7k, c + a = 8k$$

$$\Rightarrow (a + b) + (b + c) + (c + a)$$

$$= 6k + 7k + 8k$$

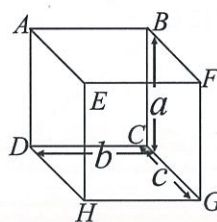
$$\Rightarrow 2(a + b + c) = 21k$$

$$\Rightarrow k = \frac{2 \times 14}{21} = \frac{4}{3}$$

$$\therefore (a + b) = 6k$$

$$= 6 \times \frac{4}{3} = 8$$

48. (a)



$$\text{Given } ab = 120 \text{ cm}^2$$

$$bc = 72 \text{ cm}^2$$

$$ca = 60 \text{ cm}^2$$

$$ab \times bc \times ca = 120 \times 72 \times 60$$

$$abc = \sqrt{5184000} = 720 \text{ cm}^3$$

Now, volume of cuboid

$$= a \times b \times c = 720 \text{ cm}^3$$

49. (a) Loss = $0.005 \times 7 \times 24$ hrs.

$$= 0.84 \text{ hrs.}$$

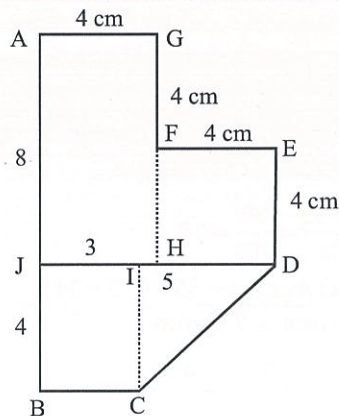
$$\text{Gain} = 0.42 \text{ hrs.}$$

$$\text{Overall loss} = 0.42 \text{ hrs.}$$

$$= 25 \text{ min. } 12 \text{ sec.}$$

$$\therefore \text{Time shown at end of 2nd week} = 11:34 \text{ a.m.}$$

50. (b)



$$\begin{aligned}
 &\text{Area ABCDEFG} \\
 &= \text{Area AJHG} + \text{Area HFED} + \text{Area JICB} + \text{Area ICD} \\
 &= (8 \times 4) + (4 \times 4) + (4 \times 3) + \frac{1}{2} \times (5 \times 4) \\
 &= 32 + 16 + 12 + 10 \\
 &= 70 \text{ cm}^2
 \end{aligned}$$

51. (c) Let the marked price = ₹ x
After a discount of 20% price

$$= x - \frac{20}{100}x = \frac{4x}{5}$$

After a 10% discount on new price

$$\begin{aligned}
 &= \frac{4x}{5} - \frac{10}{100} \times \frac{4x}{5} \\
 &= \frac{4x}{5} - \frac{2x}{25} = \frac{18x}{25}
 \end{aligned}$$

$$\text{As given } \frac{18x}{25} = 108$$

$$\Rightarrow x = \frac{108 \times 25}{18} = ₹150$$

52. (a) Add all the four numbers and then take its square root.

53. (b) Let one number = a
 \therefore Second number = $4a$

$$\Rightarrow 4a \times a = 1936$$

$$\Rightarrow a^2 = \frac{1936}{4} = 484$$

$$\Rightarrow a^2 = 484$$

$$\Rightarrow a^2 = (2 \times 2) \times (11 \times 11)$$

$$\Rightarrow a = 2 \times 11 = 22$$

$$\text{and } 4a = 4 \times 22 = 88$$

\therefore Numbers are 22 and 88.

54. (c) $x + 8\% \text{ of } x = 135$

$$\frac{108x}{100} = 135$$

$$x = 135 \times \frac{100}{108} = 125.$$

55. (d) The required number must be a multiple of 7 and also of L.C.M. of 6, 9, 15, 18 when 4 is subtracted from it.

L.C.M. of 6, 9, 15, 18 is 90.

$$90 + 4 = 94,$$

but it is not divisible by 7

$$180 + 4 = 184$$

it is not divisible by 7

$$\text{Also } 270 + 4 = 274$$

is not divisible by 7

$$\text{But, } 360 + 4 = 364$$

is divisible by 7

Hence, the required number is 364.

56. (b) Volume of cube = a^3

$$\text{Now, } \frac{V_a}{V_b} = \frac{343}{1331}$$

$$\frac{a^3}{b^3} = \left(\frac{7}{11}\right)^3, a : b = 7 : 11$$

57. (b) Let the two parts are x and $(78 - x)$

$$\therefore \frac{5x}{4(78 - x)} = \frac{15}{14}$$

$$\Rightarrow \frac{x}{2(78 - x)} = \frac{3}{7}$$

$$\Rightarrow 7x = 468 - 6x$$

$$\Rightarrow 13x = 468$$

$$\Rightarrow x = 36$$

58. (c) Area of each square on chessboard = 6.25 cm^2
Area of 64 squares on chessboard = $6.25 \times 64 \text{ cm}^2$

\therefore Side of chessboard

$$= \sqrt{6.25 \times 64} + 4 = 2.5 \times 8 + 4$$

$$\text{Side of chessboard} = 20 + 4 = 24 \text{ cm}$$

[Side includes the border also]

59. (d) Clearly, HCF is 1

60. (b) The total of 32 observations
= $32 \times \text{their mean}$
= $32 \times 28 = 896$

The total of remaining 18 observations = 540

Hence, the total of 50 observation = $896 + 540 = 1436$

Now, the required mean

$$= \frac{1436}{50} = 28.72$$

61. (a)

$$\therefore \angle A + \angle B + \angle C + \angle D = 360^\circ$$

(By angle sum property)

$$x + 2x + 3x + 4x = 360^\circ$$

$$\Rightarrow 10x = 360^\circ$$

$$\angle x = 36^\circ$$

62. (b) Let CP = ₹x

$$\text{First SP} = 115\% \text{ of } x = \frac{23}{20}x$$

$$\text{second CP} = 90\% \text{ of } x = \frac{9x}{10}$$

$$\text{second SP} = 120\% \text{ of } \frac{9x}{10}$$

$$= \frac{120}{100} \times \frac{9x}{10} = \frac{27x}{25}$$

It is given that,

$$\frac{23x}{20} - \frac{27x}{25} = 28$$

$$\Rightarrow \frac{115x - 108x}{100} = 28$$

$$\Rightarrow x = \frac{28 \times 100}{7} = ₹400$$

63. (a) Let r_1 be the radius of hemisphere and r_2 be the radius of the cone.

Given that volume of hemisphere = volume of cone.

$$\frac{2}{3}\pi r_1^3 = \frac{1}{3}\pi r_2^2 h$$

$$\Rightarrow \frac{2}{3}\pi 6^3 = \frac{1}{3}\pi r_2^2 \times 75$$

$$\Rightarrow r_2^2 = \frac{2 \times 6 \times 6 \times 6}{75}$$

$$r_2 = \frac{12}{5} = 2.4 \text{ cm}$$

64. (d) Let the numerator of rational number = x
Then, the denominator of rational number = x + 8

$$\therefore \text{rational number} = \frac{x}{x+8}$$

Now, according to question

$$\frac{x+17}{x+8-1} = \frac{3}{2}$$

$$\Rightarrow \frac{x+17}{x+7} = \frac{3}{2}$$

$$\Rightarrow 2x + 34 = 3x + 21$$

$$\Rightarrow 3x - 2x = 34 - 21$$

$$\Rightarrow x = 13$$

 \therefore The required rational number

$$= \frac{x}{x+8} = \frac{13}{13+8} = \frac{13}{21}$$

65. (b) Let edge of new cube be x.

So according to question,

$$x^3 = 6^3 + 8^3 + 10^3$$

$$\Rightarrow x = 12 \text{ cm}$$

66. (c) The rule is $a + b = \left(\frac{a+b}{2}\right)^2$

$$3 + 5 = \left(\frac{3+5}{2}\right)^2 \text{ etc.}$$

$$\therefore 11 + 3 = \left(\frac{11+3}{2}\right)^2 = 49$$

67. (b) \therefore Distance travelled in the first one hour = 35 km/hrSo, speed of car in the first one hour = 35 km/hr
As, the speed of car increases by 2 km after every one hour.Therefore, the total distance travelled in 12 hours
= 35 + 37 + 39 + 41 + 43 + 45 + 47 + 49 + 51 + 53 + 55 + 57

$$= (35 + 57) + (37 + 55) + (39 + 53) + (41 + 51) + (43 + 49) + (45 + 47)$$

$$= 92 + 92 + 92 + 92 + 92 + 92$$

$$= 92 \times 6 = 552 \text{ km}$$

68. (b) Let the original radius =
- r

$$\therefore \text{Original area } A = \pi r^2$$

$$\text{increased area } A' = \pi(r+1)^2$$

$$\text{Now, } A' = A + 22$$

$$\pi(r+1)^2 = \pi r^2 + 22$$

$$\Rightarrow \pi[(r+1)^2 - r^2] = 22$$

$$\Rightarrow \pi[(r+1+r)(r+1-r)] = 22$$

$$\Rightarrow \pi(2r+1) = 22$$

$$2r+1 = \frac{22 \times 7}{22} \quad \left[\because \pi = \frac{22}{7} \right]$$

$$\Rightarrow 2r+1 = 7$$

$$\Rightarrow 2r = 6$$

$$\Rightarrow r = 3 \text{ cm}$$

69. (c) Let actual sides of rectangle are '
- l
- ' and '
- b
- ' respectively.

Actually measured sides are $(l + 0.05l)$ and $(b + 0.03b)$ i.e. $1.05l$ and $1.03b$

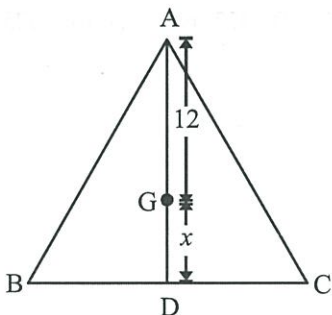
$$\text{Measured area} = (1.05l)(1.03b) = 1.0815lb$$

$$\text{Actual Area} = lb$$

$$\text{Error in area} = 1.0815lb - lb$$

$$\therefore \% \text{ error} = \left(\frac{0.0815lb}{lb} \times 100 \right) \% = 8.15\%$$

70. (b)



Here AD be the median of $\triangle ABC$.

$$\therefore GD = x \text{ unit}$$

$$\therefore \text{length of median} = 12 + x.$$

Since, G divides median in 2 : 1 ratio.

$$\therefore 12 : x = 2 : 1$$

$$\Rightarrow \frac{12}{x} = \frac{2}{1}$$

$$\Rightarrow x = 6$$

$$\text{Hence, length of median} = 12 + 6 = 18 \text{ units}$$

71. (b)

Class Interval	Midpoint (x_i)	Frequency f_i	$f_i x_i$
90-100	95	10	950
80-90	85	15	1275
70-80	75	14	1050
60-70	65	12	780
50-60	55	9	495
		$\sum f_i = 60$	$\sum f_i x_i = 4550$

$$\therefore \text{mean, } \bar{x} = \frac{\sum f_i x_i}{\sum f_i} = \frac{4550}{60} = 75.83$$

$$72. (c) \frac{P(1+r)^3}{P(1+r)^2} = \frac{714}{672}$$

$$\Rightarrow (1+r) = \frac{714}{672}$$

$$\Rightarrow r = \frac{42}{672} = \frac{1}{16}$$

$$\Rightarrow r = 6.25\% = 6\frac{1}{4}\%$$

73. (c) Total rose production
-
- $= (15 + 12.5 + 12.45 + 20 + 12.4 + 22.5 + 22.4 + 25)$
-
- $\times 1000 = 142250$

Now, 10% of total production

$$= \frac{142250 \times 10}{100} = 14,225.$$

Obviously, Haryana, Karnataka and Rajasthan contribute less than 10% in the total production.

74. (d) Total production of rose by all the states = 142250

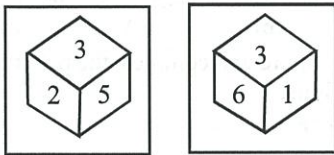
$$\therefore \text{Average} = \frac{142250}{8}$$

$$= 18 \text{ thousand (approx).}$$

75. (d) Total production of states having production below 20,000 = 15000 + 12500 + 12450 + 12400 = 52,350
- $$\therefore \text{Required \%} = \frac{52,000}{142250} \times 100 = 36.6\%$$
- It is 36.6% approximately.
76. (b) The excerpt that I want to read from the book includes a description of the fall of the Roman Empire.
77. (d) He was caught pilfering book from the shop.
78. (b) After the wrestling match, the wrestler had run out of steam. He was completely out of energy.
79. (b) It proved to be a great learning experience for Brian.
80. (c) The reporter provided a detailed account of the whole incident.
81. (b) Poverty and illiteracy are two of the greatest social evils.
82. (b) He is quite dull.
83. (d) He was very polite to me.
84. (b) A government run by a dictator is known as autocracy.
85. (b) A person in charge of a museum is a curator.
86. (a) The building was destroyed by the earthquake.
87. (c) Mats are made by him.
88. (d) She has been given a notice by her manager.
89. (a) An experiment was done by the teacher.
90. (c) Stupas were built to house the relics of Buddha and later saints.
91. (d) Dynamite, anti-tank mines and anti-aircraft guns were used to destroy the statues.
92. (c) Artillery means heavy weaponry.
93. (b) The archaeologists discovered empty caverns and debris at Bamiyan.
94. (a) Caverns mean a tunnel or a large cave.
95. (b) the word 'poor' is a plural here, hence the helping verb should be in plural (are) form.
96. (a) the word 'me' is an objective case it should be replaced with nominative case 'I'.
97. (c) the options (a) and (b) are sentences and the option (c) is question tag which is not correct. The correct question tag is 'shall we?' Hence, the option (c) is the correct answer.
98. (c) to get into difficult situation
99. (a) to rain heavily
100. (b) to be bitterly hostile
101. (b) 102. (d) 103. (a) 104. (c) 105. (c)
106. (a) 107. (d) 108. (a) 109. (a) 110. (c)
111. (c) 112. (d) 113. (b) 114. (a) 115. (c)
116. (b) 117. (d) 118. (c) 119. (a) 120. (c)
121. (d) 122. (d) 123. (a) 124. (d) 125. (c)

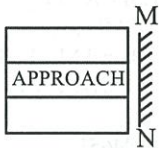
INTELLIGENCE TEST

1. Two positions of a dice are given. Which number would be at the top when bottom is 2?

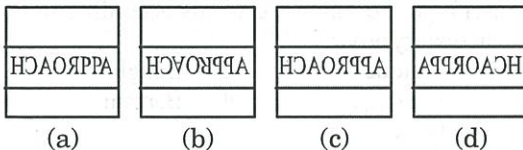


- (a) 4 (b) 1 (c) 5 (d) 6
2. Choose odd one out
(a) Square (b) Triangle
(c) Rectangle (d) Cuboid
3. If the day before yesterday was Sunday, what day will it be three days after the day after tomorrow?
(a) Sunday (b) Monday
(c) Wednesday (d) Saturday
4. If a mirror is placed on the line MN, then which of the answer figures is the right image of the given figure?

Question figure:



Answer figures:



DIRECTIONS (Qs. 5-6) : In the following question a series is given with one term missing. Choose the correct alternative from the given ones that will complete the series.

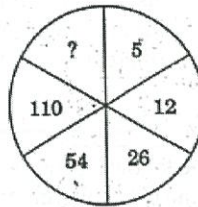
5. 2, 3, 6, 7, 14, 15, ?
(a) 16 (b) 30 (c) 31 (d) 32

6. STU, WXY, ABC, ___?
(a) DEF (b) EFG (c) FCG (d) EGF

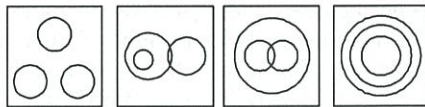
DIRECTIONS (Qs. 7-8) : In the following questions, select the missing number from the given responses.

7. $\begin{array}{ccc} 5 & 25 & 5 \\ 7 & 49 & 7 \\ 6 & ? & 6 \end{array}$
(a) 38 (b) 40 (c) 36 (d) 35

8.

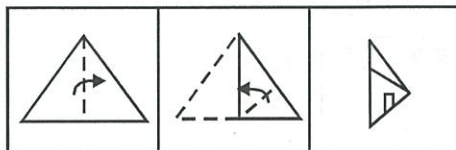


- (a) 132 (b) 122 (c) 222 (d) 212
9. Select the venn diagram that correctly shows the relationship. Continent, City, Country

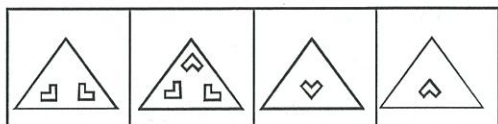


- (a) (b) (c) (d)
10. A triangular piece of paper is folded and cut as shown below. Find out from the answer figures how it will appear when opened.

Question Figures :



Answer Figures :



- (a) (b) (c) (d)

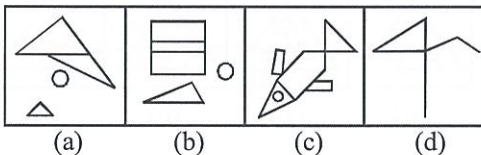
11. If '-' stands for '÷'; '+' stands for '×'; '÷' stands for '-' and '×' stands for '+', which one of the following is correct?
- (a) $10 + 5 - 5 \div 5 \times 5 = 10$
 (b) $10 - 5 + 5 \div 5 \times 5 = 25$
 (c) $10 \times 5 \div 5 + 5 - 5 = 0$
 (d) $10 \div 5 \times 5 - 5 + 5 = 15$
12. Veni is a year older than Smith. Smith is two years older than Salim. Raju is a year older than Salim. Who is the youngest of all ?
 (a) Raju (b) Salim (c) Veni (d) Smith
13. A cyclist goes 30 km to North and then turning East he goes 40 km. Again he turns to his right and goes 20 km. After this, he turns to his right and goes 40 km. How far is he from his starting point ?
 (a) 25km (b) 40km (c) 6km (d) 10km
14. A family consists of a man, his wife, his three sons, their wives and three children in each son's family. How many members are there in the family ?
 (a) 12 (b) 13 (c) 15 (d) 17

DIRECTIONS (Qs. 15-16): In the following questions, find the odd number/letters from the given alternatives.

15. (a) VWY (b) QRT
 (c) LMO (d) JKL
16. (a) 12-16 (b) 60-80
 (c) 30-50 (d) 36-48
17. Five policemen are standing in a row facing south. Shekhar is to the immediate right of Dhanush. Bala is between Basha and Dhanush. David is at the extreme right end of the row. Who is standing in the middle of the row?
 (a) Bala (b) Basha
 (c) Shekhar (d) Dhanush
18. Which of the answer figures include the separate components found in the question figure?

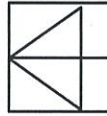


Answer figures:

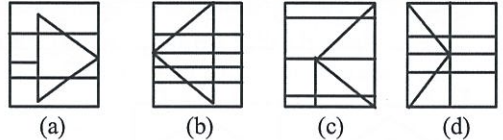


19. From the given answer figures, select the one in which the question figure is hidden/ embedded.

Question Figure:

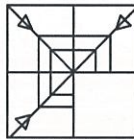


Answer Figures:

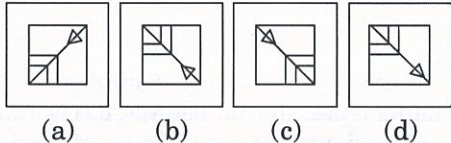


20. Which answer figure will complete the pattern in the question figure?

Question Figure



Answer Figures:



21. If SEASONAL is written as ESSANOLA, how can SEPARATE be written in that code?
 (a) SEAPARET (b) ESPARATE
 (c) ESPAARTE (d) ESAPARET
22. If FLATTER is coded as 7238859 and MOTHER is coded as 468159, then how is MAMMOTH coded?
 (a) 4344681 (b) 4344651
 (c) 4146481 (d) 4346481
23. Arrange the following words according to the dictionary order.
 1. Banquet 2. Bangle
 3. Bandage 4. Bantam
 5. Bank
 (a) 3, 2, 4, 5, 1 (b) 3, 5, 2, 1, 4
 (c) 3, 2, 1, 5, 4 (d) 3, 2, 5, 1, 4
24. From the given alternatives select the word which cannot be formed using the letters of the given word.

REASONABLE

- (a) NOBLE (b) BONES
 (c) BRAIN (d) ARSON

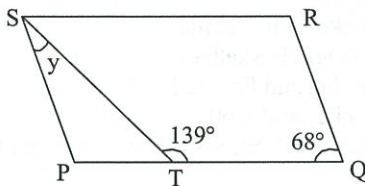
25. Select the related word from the given alternatives.

Square : Cube :: Circle : ?

- (a) Ellipse (b) Parabola
(c) Cone (d) Sphere

MATHEMATICS

26. If $HCF(a, b) = 12$ and $a \times b = 1800$, then $LCM(a, b) =$
(a) 900 (b) 150 (c) 90 (d) 3600
27. PQRS is a parallelogram. Then, y equals:



- (a) 27° (b) 61° (c) 41° (d) 28°
28. What number should replace the question mark?
4322 : 48
4172 : 56
7615 : ?
(a) 336 (b) 210 (c) 49 (d) 52
29. The smallest number by which 18432 must be divided so that quotient is a perfect cube, is
(a) 2 (b) 36
(c) 12 (d) None of these
30. The numerator of a fraction is 4 less than its denominator. If the numerator is decreased by 2 and the denominator is increased by 1, then denominator is eight times the numerator. The fraction is
(a) $\frac{9}{13}$ (b) $\frac{5}{9}$
(c) $\frac{3}{7}$ (d) None of these
31. The cost of levelling and turfing a square lawn at ₹4.00 per m^2 is ₹6400. The cost of fencing it at ₹10 per metre is
(a) ₹1600 (b) ₹400
(c) ₹160 (d) None of these
32. The sides of a triangle are in the ratio $\frac{1}{2} : \frac{1}{3} : \frac{1}{4}$ and its perimeter is 104 cm. The length of the longest side is
(a) 48 cm (b) 32 cm
(c) 26 cm (d) 52 cm
33. LCM of $1\frac{1}{4}$, $1\frac{2}{3}$, $2\frac{1}{2}$ is

- (a) $\frac{5}{12}$ (b) 5 (c) $\frac{125}{12}$ (d) 125

34. A number is multiplied by $\frac{1}{3}$ times itself and 18 is added to the result. If the final result is 2901, the number is

- (a) 54 (b) 93 (c) 83 (d) 84

35. One card is drawn from a pack of 52 cards, each of the 52 cards being equally likely to be drawn. The probability that the drawn card is either red or king is

- (a) $\frac{7}{13}$ (b) $\frac{1}{13}$ (c) $\frac{27}{52}$ (d) $\frac{1}{2}$

36. In what time will ₹72 become ₹81 at $6\frac{1}{4}\%$ p.a. SI?

- (a) $1\frac{1}{2}$ year (b) $2\frac{1}{2}$ years
(c) 2 years (d) None of these

37. At what compound interest rate will a sum be 16 times of itself in 4 years?

- (a) 20% (b) 25% (c) 50% (d) 100%

38. 3 chairs and 2 tables cost ₹700 and 5 chairs and 3 tables cost ₹1100. The cost of 2 chairs and 2 tables is

- (a) ₹800 (b) ₹600 (c) ₹900 (d) ₹1000

39. Two cubes each of 10 cm edge are joined end to end. The surface area of the resulting cuboid is

- (a) 400 sq.cm (b) 300 sq.cm
(c) 1000 sq.cm (d) 800 sq.cm

40. A train does a journey without stopping in 8 hours. If it had travelled 5 km an hour faster, it would have done the journey in 6 hours 40 min, its slower speed is

- (a) 32 km/hr (b) 25 km/hr
(c) 28 km/hr (d) 40 km/hr

41. The radius of wheel is 1.4 decimeter. How many times does it revolve during a journey of 0.66 km?

- (a) 500 (b) 750 (c) 900 (d) 950

42. If 10 masons can build a 50 meters long wall in 25 days of 8 hours each, then in how many days of 6 hours each will 15 masons build a 36 metres long wall?

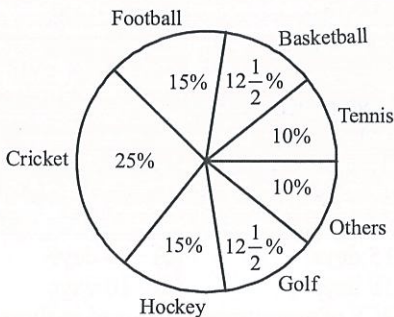
- (a) 15 days (b) 24 days
(c) 18 days (d) 16 days

43. The HCF of two numbers obtained in three steps of division is 7. The first three quotients are 2, 4 and 6 respectively. The numbers are

- (a) 175, 392 (b) 189, 392
(c) 168, 385 (d) None of these

44. In $\triangle ABC$, AD bisects $\angle BAC$ and $AD = DC$.
If $\angle ADB = 100^\circ$, then value of $\angle ABD$ is
(a) 40° (b) 50° (c) 30° (d) 35°
45. If $A : B : C = 2 : 3 : 4$, then $\frac{A}{B} : \frac{B}{C} : \frac{C}{A}$ is equal to
(a) $4 : 9 : 16$ (b) $8 : 9 : 12$
(c) $8 : 9 : 16$ (d) $8 : 9 : 24$
46. A cloth merchant decides to sell his material at the cost price, but measures 80 cm for a metre. His gain % is.
(a) 15% (b) 18% (c) 20% (d) 25%
47. If 20% of 60% of a number is 144, then the number is
(a) 1200 (b) 2880
(c) 8640 (d) None of these
48. The radii of two cylinders are in the ratio of 2 : 3 and their heights in ratio of 5 : 3, their volumes will be in ratio of
(a) 4 : 9 (b) 27 : 20
(c) 20 : 27 (d) 9 : 4
49. The slant height of a cone is increased by P%. If radius remains same, the curved surface area is increased by
(a) P% (b) $P^2\%$
(c) $2P\%$ (d) None of these
50. Area of a square field is 22500 m^2 . A man cycles along its boundary at 15 km/hr. The time will be taken by a man to return to starting point, is
(a) 2 min 24 sec. (b) 3 min 12 sec.
(c) 4 mins. (d) None of these
51. If the total amount spent on sports during the year was ₹ 1, 20,000, the amount spent on basketball was :
(a) ₹ 9,500 (b) ₹ 10,000
(c) ₹ 12,000 (d) ₹ 15,000
52. Graph shows that the most popular game of the country is
(a) Hockey (b) Football
(c) Cricket (d) Tennis
53. Out of the following, the country spent the same amount on
(a) Hockey and Tennis
(b) Golf and Basketball
(c) Cricket and Football
(d) Hockey and Golf
54. In an examination, a student was asked to find $\frac{3}{14}$ of a certain number. By mistake, he found $\frac{3}{4}$ of it. His answer was 150 more than the correct answer. Find the number.
(a) 180 (b) 280 (c) 380 (d) 480
55. $\frac{5}{6} \div \frac{6}{7} \times ? - \frac{8}{9} \div 1\frac{3}{5} + \frac{3}{4} \times 3\frac{1}{3} = 2\frac{7}{9}$
(a) $\frac{7}{6}$ (b) $\frac{6}{7}$
(c) 1 (d) None of these
56. The whole number which is a multiple of every number is
(a) 0
(b) 1
(c) There is no such number
(d) None of these
57. Highest common factor of 42 and 162 is _____.
(a) 6 (b) 4 (c) 12 (d) 2
58. The ratio between two numbers is 3 : 4. If each number is increased by 6 the ratio becomes 4 : 5. The difference between the numbers is
(a) 1 (b) 3 (c) 6 (d) 8
59. The population of a town is 145530. If it increases at the rate of 5% per annum, what was it 2 yr ago?
(a) 132000 (b) 142000
(c) 136000 (d) 139000
60. A seller says he sells goods at 10% loss, but he actually uses the wrong measuring scale and gains 15%. what is the length of a meter scale?
(a) 0.7628 (b) 0.6728
(c) 0.8762 (d) 0.7826

DIRECTIONS (Qs. 51-54): The following given pie chart here shows the spending of a country on various sports during a particular year. Study the graph and answer the following four questions that follow:



51. The ratio of total amount spent on football to that spent on hockey is
(a) 1 : 15 (b) 1 : 1
(c) 15 : 1 (d) 3 : 20

62. A family consists of grandparents, parents and 4 grandchildren. If average age of grandparents is 67, average age of parents is 35 and average age of grandchildren is 6, then what is the average age of the family?
(a) 25 (b) 26 (c) 28 (d) 30
63. 6 boys and 3 men can do 5 times the work done by 1 man and 1 boy in an hour. Calculate the ratio of work done by men and boy?
(a) 2:1 (b) 1:2
(c) 2:3 (d) None of these
64. A can finish a work in 20 days. A works for 5 days and leave, then B finish the remaining work in 10 days. How much time will be required to do the work if both A and B work together?
(a) 7 days (b) 8 days
(c) 8.5 days (d) 9 days
65. If the cost of rice increases by 25 percent then expenditure of family increase by 10 percent. If family was consuming 40kg rice before how much family is consuming now?
(a) 32.2 kg (b) 28.6 kg
(c) 35.2 kg (d) None of these
66. The cost price of 20 articles is the same as the selling price of x articles. If the profit is 25%, then the value of x is?
(a) 15 (b) 16 (c) 18 (d) 25
67. In a certain store, the profit is 320% of the cost. If the cost increases by 25% but the selling price remains constant, approximately what percentage of the selling price is the profit?
(a) 30% (b) 70% (c) 100% (d) 250%
68. If $A = x\%$ of y and $B = y\%$ of x , then which of the following is true?
(a) A is smaller than B.
(b) A is greater than B
(c) None of these
(d) If x is smaller than y , then A is greater than B.
69. If 20% of $a = b$, then $b\%$ of 20 is the same as:
(a) 4% of a (b) 5% of a
(c) 20% of a (d) None of these
70. The sum of ages of 5 children born at the intervals of 3 years each is 50 years. What is the age of the youngest child?
(a) 4 years (b) 5 years
(c) 8 years (d) 10 years
71. What should come in place of both x in the equation $\frac{x}{\sqrt{128}} = \frac{\sqrt{162}}{x}$
(a) 12 (b) 14 (c) 144 (d) 196
72. A alone can do a piece of work in 6 days and B alone in 8 days. A and B undertook to do it for Rs. 3200. With the help of C, they completed the work in 3 days. How much is to be paid to C?
(a) 375 rs. (b) 400 rs.
(c) 600 rs. (d) 750 rs.
73. A man complete a journey in 10 hours. He travels first half of the journey at the rate of 21 km/hr and second half at the rate of 24 km/hr. Find the total journey in km.
(a) 220km (b) 224km
(c) 245km (d) 278km
74. The value $\frac{0.1 \times 0.1 \times 0.1 + 0.02 \times 0.02 \times 0.02}{0.2 \times 0.2 \times 0.2 + 0.04 \times 0.04 \times 0.04}$ of is?
(a) 0.0125 (b) 25
(c) 0.25 (d) 0.125
75. The ratio between the perimeter and the breadth of a rectangle is 5 : 1. If the area of the rectangle is 216 sq. cm, what is the length of the rectangle?
(a) 24 (b) 18
(c) 16 (d) None of these

LANGUAGE TEST

DIRECTIONS (Qs. 76 -80): Choose the best option to complete each sentence.

76. That university is a/an _____ university. It does not have to follow the government policies.
(a) reliant (b) autonomous
(c) dependant (d) Indian
77. He has won _____ for creating an inexpensive water treatment plant for his school science project.
(a) desire (b) accolades
(c) happiness (d) prize
78. He knew how to _____ someone to the height of a mountain.
(a) raise (b) push (c) exalt (d) send
79. This organisation _____ of all the major countries of the world.
(a) collects (b) comprises
(c) divides (d) has
80. The foreign tourist was _____ at the state of poor people in India.
(a) appalled (b) glared
(c) seized (d) attracted

DIRECTIONS (Qs. 81-83): Choose the antonym of the underlined word in each sentence.

81. He was flustered.
 (a) rejoiced (b) amazed
 (c) agitated (d) calm
82. The opposition party was not able to wrest power from the ruling party.
 (a) renounce (b) give
 (c) control (d) snatch
83. He gave me a very lucrative offer.
 (a) absurd (b) valuable
 (c) precious (d) unnecessary

DIRECTIONS (Qs. 84-85): Choose the most appropriate option to fill the blanks.

84. A man who has no money is called a _____.
 (a) frugal (b) pauper
 (c) beggar (d) filthy
85. A sleep enjoyed in the afternoon is _____.
 (a) nap (b) after noon sleep
 (c) noon sleep (d) siesta

DIRECTIONS (Qs. 86 - 88) : Select the option that changes given sentences into passive form.

86. I keep all the fruits in the fridge.
 (a) All the fruits are being kept in the fridge.
 (b) All the fruits will be kept in the fridge.
 (c) All the fruits are kept in the fridge.
 (d) Fruits are kept in the fridge.
87. They have written a new editorial.
 (a) They might have written a new editorial.
 (b) A new editorial was written by them.
 (c) They will write a new editorial.
 (d) A new editorial has been written by them.
88. The teacher gave the notebooks back to the students.
 (a) The notebooks were given back to the students by the teacher.
 (b) The students got their notebooks back from their teacher.
 (c) The teacher has given back the notebooks to the students.
 (d) The students will get their notebooks back from their teacher.

DIRECTIONS (Qs. 89 - 93): Read the passage given below and answer the questions that follow.

With two Mars orbiters sent into space last year, including India's MOM probe, traffic has picked up around the Red Planet so much that NASA has bolstered its traffic monitoring process to avoid

spacecraft collisions. The US space agency has beefed up a process of traffic monitoring, communication and manoeuvre planning to ensure that Mars orbiters do not approach each other too closely.

The new traffic system in space is handled by NASA's Jet Propulsion Laboratory (JPL) which hopefully will keep accidents and collisions from happening. JPL will alert the handlers of other orbiters if the spacecraft comes too close towards each other's range. With communication facilities in the US, Spain and Australia, the system utilises a global antenna network designed to assist interplanetary spaceflight. The system will also help NASA keep track of Mars Global Surveyor, an orbiter sent in 1997, which has since stopped working.

89. What is the meaning of bolster used in the above passage?
 (a) Increase (b) Decrease
 (c) Strengthen (d) Modify
90. What do you understand by 'beefed up the process'?
 (a) To strengthen (b) To speed up
 (c) To make it short (d) To start up
91. Who is going to handle the new traffic system?
 (a) NASA
 (b) JPL
 (c) The government
 (d) Spanish government
92. What was the name of the orbiter sent in 1997?
 (a) Mars Global Surveyor
 (b) Jet Propulsion Laboratory
 (c) Spacecraft
 (d) MOM
93. Where is the traffic supposed to get managed?
 (a) In America
 (b) In Spain
 (c) Around Mars
 (d) US space agency

DIRECTIONS (Qs. 94-96): In the following question, some part of the sentence may have errors. Find out which part of the sentence has an error and select the appropriate option. If a sentence is free from error, select 'No Error'.

94. It was being hard to believe (A)/that my brother could be (B)/involved in anything so sinister. (C)/No error(D)
 (a) A (b) C (c) C (d) D
95. The average age at which (A)/people die of heart diseases (B)/are decreasing. (C)/No error (D)
 (a) A (b) B
 (c) C (d) D

96. Hardly had I stepped (A)/out of my house when (B)/I saw them coming towards my house. (C)/No error(D)
(a) A (b) B (c) C (d) D

DIRECTIONS (Qs. 97-100): In the following questions four alternatives are given for idioms/phrases in now. Choose the one that best expresses the meaning of the given idiom/phrase.

97. Brain sauce
(a) Foolish
(b) Wisdom
(c) Mentally ill
(d) Head full of thoughts
98. Lynch law
(a) Law imposed by the government
(b) Law of the mob
(c) A law that is supposed to be useless
(d) A rule that no one follows
99. Globetrotters
(a) Travellers around the world
(b) Sick people in hospital
(c) The people living in asylum
(d) World champions
100. Dole out
(a) Allocate (b) Be effective
(c) Turn up (d) Mismanage

GENERAL KNOWLEDGE

101. Which Continent has the largest coastline?
(a) Asia (b) North America
(c) South America (d) Africa
102. Which game is Geet Sethi associated with?
(a) Squash (b) Table Tennis
(c) Billiards (d) Golf
103. In which state of India "Than Ta Dance" is related?
(a) Meghalaya (b) Manipur
(c) Assam (d) Sikkim
104. When our Constitution was adopted?
(a) 26 November 1949
(b) 26 January 1949
(c) 26 January 1950
(d) 26 November 1950
105. The Hardest substance on the Earth?
(a) Iron (b) Silver
(c) Diamond (d) Lead
106. The language of Ashoka's Inscription?
(a) Sanskrit (b) Tamil
(c) Prakrit (d) Parthian
107. Who was awarded first Bharat Ratana?
(a) M. Visvesvaraya
(b) Sarvepalli Radhakrishnan
(c) Govind Ballabh Pant
(d) Rajendra Prasad
108. The first Modern Olympic held where and which city?
(a) France (b) Britain
(c) Cuba (d) Greece
109. Oldest Mountain range in India?
(a) Himalaya (b) Aravali
(c) Satpura (d) Nilgiri
110. Number of Players in Basket Ball?
(a) 11 (b) 9 (c) 7 (d) 5
111. Shuddhi Movement was run by?
(a) Arya Samaj (b) Brahmo Samaj
(c) Prarthana Samaj (d) None of these
112. ISRO's Satish Bahwan Space Center is located at which place?
(a) Andhra Pradesh (b) Telangana
(c) Tamil Nadu (d) Odisha
113. The Author of the book "The Golden Threshold"?
(a) R.K Narayan (b) Sarojini Naidu
(c) Jhumpa Lahiri (d) Arundhati Roy
114. The founder of Stavahana Dynasty?
(a) Satakarni (b) Simuka
(c) Pulumavi (d) Kanha
115. Uber cup is related to which sport?
(a) Cricket (b) Badminton
(c) Football (d) Tennis
116. Who is the youngest grandmaster in India?
(a) Parimarjan Negi (b) D. Gukesh
(c) Krishnan Sasikiran (d) Surya Shekhar
117. From which country India bought C-17 transport aircraft?
(a) Iran (b) France
(c) USA (d) Germany
118. Who is Indian Air Chief in November 2020?
(a) Marshal RKS Bhaduria
(b) Arup Raha
(c) Anil Kumar Browne
(d) Pradeep Vasant Naik
119. Agra city was founded by -
(a) Sikandar Lodhi (b) Babar
(c) Akbar (d) Shah Jahan
120. The visible part of the sun is called -
(a) Chromosphere (b) Photosphere
(c) Corona (d) Core
121. Ozone layer located in which layer -
(a) Stratosphere (b) Troposphere
(c) Mesosphere (d) Exosphere

122. Which is the first state in India to make its public schools completely digital?
 (a) Maharashtra (b) Andhra Pradesh
 (c) Kerala (d) Gujarat
123. Who is the Chief Minister of Mizoram?
 (a) PU Zoramthanga (b) Naveen Patnaik
 (c) Mamta Banerjee (d) Vijay Rupani
124. What is the rank position of India in CRI Index 2020?
 (a) 155th (b) 117th
 (c) 99th (d) 129th
125. _____ is the current Chief Minister of Bihar.
 (a) Nitish Kumar (b) Chirag paswan
 (c) Tejasvi Yadav (d) Sushil Modi

HINTS & EXPLANATIONS

1. (d) The numbers 1, 2, 5 and 6 are on the adjacent faces of number 3. Therefore, the number 4 lies opposite 3.
 The numbers 3, 4 and 6 can not be on the faces opposite to 1. Therefore, 5 lies opposite 1.
 Now, 2 lies opposite 6.

2. (d) All except cuboids are 3 dimensional figures.

3. (a) Day before yesterday was Sunday.

Therefore, today is Tuesday.

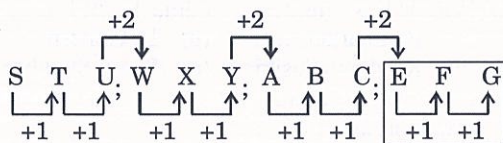
Day after tomorrow will be Thursday.

Thursday + 3 = Sunday

4. (c)

5. (b) $\begin{array}{ccccccc} 2 & 3 & 6 & 7 & 14 & 15 & \boxed{30} \\ \downarrow & \uparrow & \downarrow & \uparrow & \downarrow & \uparrow & \downarrow \\ +1 & \times 2 & +1 & \times 2 & +1 & \times 2 & \end{array}$

6. (b)



7. (c) The second column number is the product of first and third column

$$25 = 5 \times 5$$

$$49 = 7 \times 7$$

$$\boxed{36} = 6 \times 6$$

8. (c) Moving clockwise, the terms are :

$$5 \times 2 + 2 = 12$$

$$12 \times 2 + 2 = 26$$

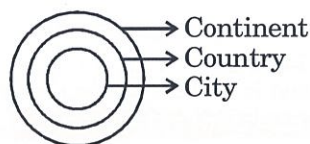
$$26 \times 2 + 2 = 54$$

$$54 \times 2 + 2 = 110$$

So, missing number

$$= 110 \times 2 + 2 = \boxed{222}$$

9. (d)



10. (a)

11. (a) After interchanging sign—
 $10 \times 5 \div 5 - 5 + 5 = 10 \times 1 - 5 + 5$
 $= 10 - 5 + 5$
 $= 15 - 5 = 10$

12. (b) Suppose the age of Salim is x years

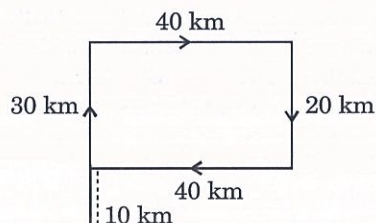
Age of Raju = x + 1 year

Age of Smith = x + 2 years

Age of Veni = x + 3 years

Therefore, Salim is the youngest of all.

13. (d)



14. (d) A man + his wife = 1 + 1 = 2

His three sons + their wives

$$= 3 + 3 = 6$$

Three children in each one's family = 3 × 3 = 9

Total members = 2 + 6 + 9 = 17

15. (d) $V \xrightarrow{+1} W \xrightarrow{+2} Y$

$$Q \xrightarrow{+1} R \xrightarrow{+2} T$$

$$L \xrightarrow{+1} M \xrightarrow{+2} O$$

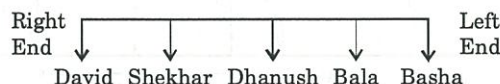
But,

$$J \xrightarrow{+1} K \xrightarrow{+1} L$$

16. (c) Except the number pair 30 – 50, all other

numbers pairs has ratio = $\frac{3}{4}$

17. (d) Standing arrangement : (facing south)



Hence, Dhanush is standing at the middle of the row.

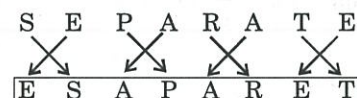
18. (c) All the components of Question Figure are present in Answer Figure (c)

19. (b)

20. (b)

21. (d) As, S E A S O N A L
 E S S A N O L A

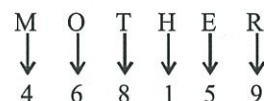
Therefore,



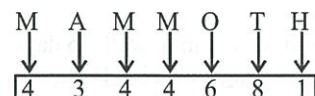
22. (a) As,



and,



Therefore,



23. (d) According to dictionary, order is : Bandage, Bangle, Bank, Banquet, Bantam.

24. (c) 'I' is not appearing in the word 'REASONABLE'. Hence BRAIN cannot be formed from the given word.

25. (d) As, cube is 3-D of square. Similarly, sphere is 3-D of circle.

26. (b) $L.C.M.(a,b) = \frac{a \times b}{H.C.F.(a,b)} = \frac{1800}{12} = 150$

27. (a) $\angle PSR = \angle PQR = 68^\circ$
 (opp. \angle s of a || gm are equal)
 $\angle PTS = 180^\circ - 139^\circ = 41^\circ$

(PTQ is a straight line)

$$\therefore \angle RST = \angle PTS = 41^\circ$$

(SR || PQ alt. \angle s are equal)

$$\therefore y = \angle PSR - \angle RST = 68^\circ - 41^\circ = 27^\circ.$$

28. (b) 210

$$7 \times 6 \times 1 \times 5 = 210$$

29. (b) $18432 = 2 \times 2 \times 2 \times 2 \times 2 \times 2 \times 2 \times 2 \times 2 \times 2 \times 3 \times 3$

18432 must be divided by 36, so that the quotient is a perfect cube

$$18432 \div 36 = 512$$

So, 512 is a cube of 8.

30. (c) Let the denominator be x and the numerator be (x - 4)

According to the question

$$8(x - 4 - 2) = (x + 1)$$

$$\Rightarrow 8(x - 6) = (x + 1)$$

$$\Rightarrow 8x - 48 = x + 1$$

$$\Rightarrow 8x - x = 1 + 48$$

$$\Rightarrow 7x = 49 \Rightarrow x = 7$$

$$\therefore \text{Required fraction} = \frac{x - 4}{x} = \frac{7 - 4}{7} = \frac{3}{7}$$

31. (a)

\therefore The cost of levelling and turfing a lawn at ₹ 4.00 per m^2 = ₹ 6400

$$\therefore \text{Area of lawn} = \frac{6400}{4} = 1600 m^2$$

$$\Rightarrow \text{side of lawn} = 40 m$$

So, the cost of fencing at ₹ 10 per metre = $4 \times 40 \times 10$ = ₹ 1600

32. (a) Sides are in the ratio $\frac{1}{2} : \frac{1}{3} : \frac{1}{4}$

i.e. 6 : 4 : 3

Let the ratio be x

\therefore Sides are 6x, 4x and 3x

Given that $6x + 4x + 3x = 104$

$$\Rightarrow 13x = 104 \Rightarrow x = 8$$

\therefore Longest side = 6x = 6×8 = 48 cm

33. (b) $1\frac{1}{4} = \frac{5}{4}$, $1\frac{2}{3} = \frac{5}{3}$, $2\frac{1}{2} = \frac{5}{2}$

LCM of $\left(\frac{5}{4}, \frac{5}{3} \text{ and } \frac{5}{2}\right)$

$$= \frac{\text{LCM of } (5, 5 \text{ and } 5)}{\text{HCF of } (4, 3, 2)} = \frac{5}{1} = 5$$

34. (b) Let the required number be 'x'
Now, as per question

$$x \times \frac{1}{3}x + 18 = 2901$$

$$\Rightarrow \frac{x^2}{3} = 2901 - 18 = 2883$$

$$\Rightarrow x^2 = 8649$$

$$x^2 = (3 \times 3) \times (31 \times 31)$$

$$\Rightarrow x = 3 \times 31 = 93$$

35. (a) Total number of events = 52.

There are 26 red cards including 2 red kings and there are 2 more black kings. Hence there are 28 cards which are either red or king. Out of this, 1 card can be drawn.

$$\therefore \text{Required probability} = \frac{28}{52} = \frac{7}{13}$$

36. (c) $A = P \left(1 + \frac{TR}{100} \right)$

$$81 = 72 \left(1 + \frac{T \times \frac{25}{4}}{100} \right)$$

$$\frac{16+T}{16} = \frac{81}{72}$$

$$16 + T = 18$$

$$T = 2 \text{ years.}$$

37. (d) Let principal = ₹ 1, then amount = ₹ 16

$$\left(1 + \frac{r}{100} \right)^4 = \frac{16}{1}$$

$$1 + \frac{r}{100} = 2$$

$$r = 100\%$$

38. (b) Let costs of 1 chair and 1 table are x and y respectively.

\therefore Cost of 3 chairs and 2 tables = ₹700

$$\Rightarrow 3x + 2y = 700 \quad \dots(1)$$

And, cost of 5 chairs and 3 tables = ₹1100

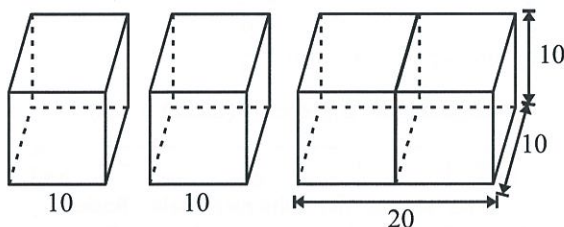
$$\Rightarrow 5x + 3y = 1100 \quad \dots(2)$$

From equation (1) and (2), we get

$$x = ₹100, y = ₹200$$

Then, the cost of 2 chairs and 2 tables is
 $= 2x + 2y = 2 \times 100 + 2 \times 200 = 600$

39. (c)



Length of cuboid = $(10 + 10) = 20$ cm

Breadth = 10 cm, Height = 10 cm

Surface area of cuboid

$$= 2(l \times b + b \times h + h \times l)$$

$$= 2(20 \times 10 + 10 \times 10 + 10 \times 20)$$

$$= 2(200 + 100 + 200) = 1000 \text{ sq. cm}$$

40. (b) Let slower speed = u km/hr
As the distance is fixed

$$u \times 8 = (u + 5) \times \frac{20}{3}$$

$$[\because 6 \text{ hr } 40 \text{ min} = 6 \text{ hr} + \frac{40}{60} \text{ hr}]$$

$$= 6 \frac{2}{3} = \frac{20}{3} \text{ hrs}]$$

$$\Rightarrow 24u = 20u + 100$$

$$\Rightarrow 4u = 100$$

$$\Rightarrow u = 25 \text{ km/hr}$$

41. (b)

\therefore Radius of wheel = 1.4 decimeter = 0.14 meter

\therefore Circumference of wheel

$$= 2 \times \frac{22}{7} \times 0.14 = 0.88 \text{ meter}$$

So, number of revolutions for 0.66 km

$$= \frac{0.66}{0.88} \times 1000 = 750$$

42. (d) 10 mason 8 hrs 50 m long wall 25 days

1 mason 8 hrs 50 m long wall 25×10 days

1 mason 1 hr 50 m long wall $25 \times 10 \times 8$ days

1 mason 1 hr 1 m long wall $\frac{25 \times 10 \times 8}{50}$ days

1 mason 1 hr 36 m long wall $\frac{25 \times 10 \times 8 \times 36}{50}$ days

1 mason 6 hr 36 m long wall $\frac{25 \times 10 \times 8 \times 36}{50 \times 6}$ days

15 mason 6 hr 36 m long wall $\frac{25 \times 10 \times 8 \times 36}{50 \times 6 \times 15}$ days

= 16 days

43. (a) Let the numbers be a and b , where $b > a$.

According Euclid's Division Lemma,

$$b = a \times 2 + r_1, \text{ where } 0 < r_1 < a$$

$$a = r_1 \times 4 + r_2, \text{ where } 0 < r_2 < r_1$$

$$r_1 = r_2 \times 6 + 0$$

$$\text{H.C.F.} = r_2 = 7$$

$$\therefore r_1 = 7 \times 6 = 42$$

$$a = 42 \times 4 + 7 = 175$$

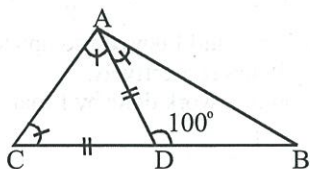
$$b = 175 \times 2 + 42 = 392$$

44. (c) $\angle ADC = 180^\circ - 100^\circ = 80^\circ$

$$\angle CAD = \angle ACD = \frac{180^\circ - 80^\circ}{2}$$

$$= 50^\circ = \angle DAB$$

$$\angle ABD = 180^\circ - 100^\circ - 50^\circ = 30^\circ$$



45. (d) Let $A = 2x$, $B = 3x$, $C = 4x$

$$\therefore \frac{A}{B} = \frac{2}{3}, \frac{B}{C} = \frac{3}{4}, \frac{C}{A} = \frac{4}{2} = \frac{2}{1}$$

$$\text{Now, } \frac{A}{B} : \frac{B}{C} : \frac{C}{A} = \frac{2}{3} : \frac{3}{4} : \frac{2}{1}$$

$$= \frac{2}{3} \times 12 : \frac{3}{4} \times 12 : \frac{2}{1} \times 12 = 8 : 9 : 24$$

46. (d) Error in measurement = $100 - 80 = 20$ cm

$$\therefore \% \text{ gain}$$

$$= \left(\frac{\text{Error}}{\text{True value} - \text{Error}} \times 100 \right) \%$$

$$\% \text{ gain} = \left(\frac{20}{100 - 20} \right) \times 100 \%$$

$$= \frac{20 \times 100}{80} \% = 25\%$$

47. (a) Let the required number be x .

$$\frac{20}{100} \times \frac{60}{100} \times x = 144$$

$$x = 1200.$$

48. (c) Let the radii of first and second cylinder be $2x$ and $3x$; and let their heights be $5y$ and $3y$, respectively.

$$\frac{\text{Volume of first cylinder}}{\text{Volume of second cylinder}}$$

$$= \frac{\pi \times (2x)^2 \times 5y}{\pi \times (3x)^2 \times 3y} \quad [\because V = \pi r^2 h]$$

$$= \frac{20}{27}.$$

49. (a) Curved surface area = $\pi r l$.

New curved surface area

$$= \pi r \left(l + \frac{Pl}{100} \right)$$

Percentage increase

$$= \frac{\pi r \left(l + \frac{Pl}{100} \right) - \pi r l}{\pi r l} \times 100 = P\%$$

50. (a) Let the side of square field = ' a ' m

$$\therefore \text{Area of square field} = a^2 \text{ sq. m}$$

$$\Rightarrow a^2 = 22500 \text{ m}^2$$

$$\Rightarrow a = 150 \text{ m}$$

Speed of cycling = 15 km/hr

$$= \frac{15 \times 1000}{60 \times 60} = \frac{25}{6} \text{ m/s.}$$

Now, total distance to be covered along the boundary = $4 \times 150 = 600$ m

$$\therefore \frac{25}{6} \text{ m is covered in 1 sec.}$$

$$\therefore 600 \text{ m is covered in}$$

$$= \frac{600}{25} \times 6 = 144 \text{ sec} = 2 \text{ min } 24 \text{ sec.}$$

51. (b) Total amount spent on football = 15%

Total amount spent on hockey = 15%

$$\text{Ratio} = 15 : 15 = 1 : 1$$

52. (d) Total amount spent = ₹1,20,000

Amount spent on basketball

$$= 12 \frac{1}{2} \% = \frac{25}{2} \%$$

of total amount spent

$$= \frac{1,20,000 \times \frac{25}{2}}{100} = ₹15000$$

53. (c) Most popular game is cricket (25%).

54. (b) The country spent the same amount on golf and basket ball ($12\frac{1}{2}\%$).

55. (b) Let the number be x
ATQ,

$$\frac{3}{4}x - \frac{3x}{14} = 150$$

$$\frac{3x}{2} \left[\frac{1}{2} - \frac{1}{7} \right] = 150$$

$$x \left[\frac{7-2}{14} \right] = 100$$

$$x \left[\frac{5}{14} \right] = 100$$

$$x = 280$$

56. (b) Let $\frac{5}{6} \div \frac{6}{7} \times x - \frac{8}{9} \div \frac{8}{5} + \frac{3}{4} \times \frac{10}{3} = \frac{25}{9}$.

Then

$$\frac{5}{6} \times \frac{7}{6} \times x - \frac{8}{9} \times \frac{5}{8} + \frac{3}{4} \times \frac{10}{3} = \frac{25}{9}$$

$$\Leftrightarrow \frac{35}{36}x - \frac{5}{9} + \frac{5}{2} = \frac{25}{9}$$

$$\Leftrightarrow \frac{35}{36}x = \frac{25}{9} + \frac{5}{9} - \frac{5}{2} = \frac{10}{3} - \frac{5}{2}$$

$$\Leftrightarrow \frac{35}{36}x = \frac{5}{6} \Leftrightarrow x = \left(\frac{5}{6} \times \frac{36}{35} \right) = \frac{6}{7}$$

57. (b)

58. (a)

59. (c) Let the number are $3x$ and $4x$.

$$\frac{3x+6}{4x+6} = \frac{4}{5}$$

$$15x + 30 = 16x + 24$$

$$x = 6$$

Number are 18 and 24.

Hence, required difference is 6.

60. (a) Population 2 yr ago

$$= \frac{145530}{\left(1 + \frac{5}{100}\right)^2}$$

$$= \left(145530 \times \frac{20}{21} \times \frac{20}{21}\right) = 132000$$

61. (d) Let the price of 1m cloth is ₹ 100.
then selling price of 1 m cloth on 10% loss

$$= 100 \times \left(\frac{100-10}{100} \right) = ₹ 90.$$

But, actually he got the profit of 15%
then, length of cloths, he sold in ₹ 90, to get 15% profit.

$$= 90 \times \frac{100}{(100+15)} = 78.26 \text{ cm}$$

Hence, length of meter scale is 0.7826m.

62. (d) total age of grandparents = $2 \times 67 = 134$ years

total age of parents = $2 \times 35 = 70$ years

total age of 4 childrens = $4 \times 6 = 24$ years

total age of the family = $134 + 70 + 24 = 228$ years

Number of members in the family = $2 + 2 + 4 = 8$

$$\text{Average age of the family} = \frac{228}{8} = 28.5 \text{ years}$$

63. (a) Let 1 man and 1 boy can complete the work in x and y hours respectively.

then, Amount of work done by 1 man and 1 boy

$$\text{in 1 hour} = \frac{1}{x} + \frac{1}{y}$$

Amount of work done by 3 men and 6 boys in 1 hour

$$= \frac{3}{x} + \frac{6}{y}$$

According to the question,

$$\frac{3}{x} + \frac{6}{y} = 5 \left(\frac{1}{x} + \frac{1}{y} \right)$$

$$\frac{6-5}{y} = \frac{5-3}{x}$$

$$\frac{1}{y} = \frac{2}{x}$$

$$\frac{x}{y} = \frac{2}{1}$$

Hence, ratio of work done by 1 man to 1 boy = $2:1$.

64. (b) Amount of work done by A in 5 days

$$= \frac{5}{20} = \frac{1}{4}$$

$$\text{Remaining work} = 1 - \frac{1}{4} = \frac{3}{4} \text{ work.}$$

$$\frac{3}{4} \text{ work is done by B in 10 days.}$$

$$\therefore \text{whole work is done by B is } = \frac{10 \times 4}{3} \text{ days.}$$

$$= \frac{40}{3} \text{ days.}$$

Time require to complete whole work by A and B together

$$= \frac{20 \times \frac{40}{3}}{20 + \frac{40}{3}} = \frac{20 \times 40 \times 3}{3 \times (60 + 40)} = 8 \text{ days.}$$

65. (c) Let initial expenditure of the family was ₹100 for 40 kg Rice.

$$\text{Increase in expenditure} = 100 + \frac{100 \times 10}{100} = 110.$$

$$\text{Initial Rate of rice} = \frac{100}{40} = ₹\frac{10}{4} = \text{per kg.}$$

After increasing price by 25%

$$\text{Rate of rice} = \frac{10}{4} \times \left(1 + \frac{25}{100}\right) = ₹\frac{25}{8} \text{ per kg}$$

Amount of rice one can purchase in ₹110

$$= \frac{100}{\frac{25}{8}} = \frac{110 \times 8}{25} = 35.2 \text{ kg.}$$

66. (b) Let C.P. of each article be Rs. 1

C.P. of x articles = Rs. x .

S.P. of x articles = Rs. 20.

Profit = Rs. $(20 - x)$.

$$\left(\frac{20 - x}{x} \times 100 = 25\right)$$

$$\Rightarrow 2000 - 100x = 25x$$

$$125x = 2000$$

$$\Rightarrow x = 16$$

67. (b) Let C.P. = Rs. 100. Then, Profit = Rs. 320, S.P. = Rs. 420.

New C.P. = 125% of Rs. 100 = Rs. 125

New S.P. = Rs. 420.

Profit = Rs. $(420 - 125)$ = Rs. 295.

∴ Required percentage

$$\left(\frac{295}{420} \times 100\right)\% = \frac{1475}{21}\% = 70$$

68. (c) $x\%$ of $y = \left(\frac{x}{100} \times y\right) = \left(\frac{y}{100} \times x\right)$

$= y\%$ of x

∴ $A = B$.

69. (a) 20% of $a = b \Rightarrow \frac{20}{100}a = b$.

∴ $b\%$ of 20

$$\left(\frac{b}{100} \times 20\right) = \left(\frac{20}{100}a \times \frac{1}{100} \times 20\right) = \frac{4}{100}a$$

70. (a) Let the ages of children be x , $(x + 3)$, $(x + 6)$, $(x + 9)$ and $(x + 12)$ years.

Then, $x + (x + 3) + (x + 6) + (x + 9) + (x + 12) = 50$

$$\Rightarrow 5x = 20$$

$$\Rightarrow x = 4.$$

∴ Age of the youngest child = $x = 4$ years.

71. (a) Let $\frac{x}{\sqrt{128}} = \frac{\sqrt{162}}{x}$

$$\text{Then } x^2 = \sqrt{128} \times \sqrt{162}$$

$$= \sqrt{64 \times 2 \times 18 \times 9}$$

$$= \sqrt{8^2 \times 6^2 \times 3^2}$$

$$= 8 \times 6 \times 3$$

$$= 144$$

$$\therefore x = \sqrt{144} = 12.$$

72. (b) C's 1 day's work

$$= \frac{1}{3} - \left(\frac{1}{6} + \frac{1}{8}\right) = \frac{1}{3} - \frac{7}{24} = \frac{1}{24}$$

A's wages : B's wages : C's wages

$$= \frac{1}{6} : \frac{1}{8} : \frac{1}{24}$$

$$= 4 : 3 : 1.$$

∴ C's share (for 3 days) = '₹' 400

73. (b) $\frac{(1/2)x}{21} + \frac{(1/2)x}{24} = 10$

$$\Rightarrow \frac{x}{21} + \frac{x}{24} = 20$$

$$\Rightarrow 15x = 168 \times 20$$

$$\Rightarrow x = \left(\frac{168 \times 20}{15}\right) = 224 \text{ km.}$$

74. (d) Given expression

$$= \frac{(0.1)^3 + (0.02)^3}{2^3[(0.1)^3 + (0.02)^3]} = \frac{1}{8} = 0.125$$

75. (b) $\frac{2(l+b)}{b} = \frac{5}{1}$

$$2l + 2b = 5b$$

$$\boxed{\times} b = 2l$$

$$b = \frac{2}{3}l$$

Then, Area = 216 cm^2

$$\boxed{\times} \times b = 216$$

$$\boxed{\times} l \times \frac{2}{3}l = 216$$

$$l^2 = 324$$

$$\boxed{\times} = 18 \text{ cm.}$$

76. (b) That university is an autonomous university. It does not have to follow the government policies.

77. (b) He has won accolades for creating an inexpensive water treatment plant for his school science project.

78. (c) He knew how to exalt someone to the height of a mountain.

79. (b) This organisation comprises of all the major countries of the world.

80. (a) The foreign tourist was appalled at the state of poor people in India.

81. (c) He was calm.

82. (a) The opposition party was not able to renounce power from the ruling party.

83. (d) He gave me a very unnecessary offer.

84. (b) A man who has no money is called a pauper.

85. (d) A sleep enjoyed in the afternoon is siesta.

86. (c) All the fruits are kept in the fridge.

87. (d) A new editorial has been written by them.

88. (a) The notebooks were given back to the students by the teacher.

89. (c) Bolster means to strengthen.

90. (a) 'Beefed up the process' means to strengthen the process.

91. (b) NASA's Jet Propulsion Laboratory (JPL) is going to handle the new traffic system.

92. (a) The name of the orbiter sent in 1997 was Mars Global Surveyor.

93. (c) The traffic is supposed to get managed around Mars.

94. (a) "Being" should be removed because two forms of "be" in a complement should not be used.

95. (c) When we talk about "age" and if we need to talk about the context related to lessening, the word "reduce" should be used.

96. (d) No Error

97. (b) 98. (b) 99. (a) 100. (a)

101. (a) 102. (a) 103. (c) 104. (a) 105. (b)

106. (c) 107. (c) 108. (d) 109. (b) 110. (d)

111. (a) 112. (a) 113. (b) 114. (a) 115. (b)

116. (b) 117. (c) 118. (a) 119. (a) 120. (b)

121. (a) 122. (c) 123. (a) 124. (d) 125. (a)

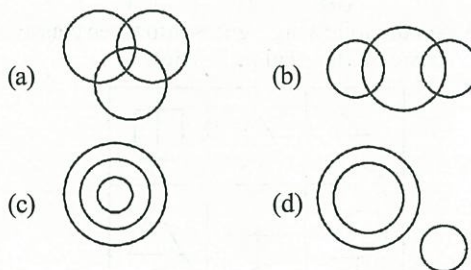
INTELLIGENCE TEST

DIRECTIONS (Qs. 1-2) : In each of the following questions, choose the missing term out of the given alternatives. Reference : A B C D E F G H I J K L M N O P Q R S T U V W X Y Z

- AZ, CX, FU,
(a) IR (b) IV (c) JQ (d) KP
- 3F, 6G, 11I, 18L,
(a) 21O (b) 25N (c) 27P (d) 27Q
- If the first and second letters in the word DEPRESSION were interchanged, also the third and the fourth letters, the fifth and the sixth letters and so on, which of the following would be the seventh letter from the right ?
(a) R (b) O
(c) S (d) None of these
- Arrange the given words in alphabetical order and choose the one that comes in the 2nd position.
(a) Restrict (b) Rocket
(c) Robber (d) Radom
- In a row of students, Deepak is seventh from the left and Madhu is twelfth from the right. If they interchange their positions, Deepak becomes twenty-second from the left. How many students are there in the row?
(a) 19 (b) 31
(c) 33 (d) Can't be found
- Ajay is the brother of Vijay. Mili is the sister of Ajay. Sanjay is the brother of Rahul and Mehul is the daughter of Vijay. Who is Sanjay's Uncle ?
(a) Rahul (b) Ajay
(c) Mehul (d) Data inadequate
- Pointing out to a photograph, a man tells his friend, "she is the daughter of the only son of my father's wife. How is the girl in the photograph related to the man?
(a) Daughter (b) Cousin
(c) Mother (d) Sister
- Jatin leaves his house and walks 12 km towards North. He turns right and walks another 12 km. He turns right again, walks 12 km more and turns left to walk 5 km. How far is he from his home and in which direction ?

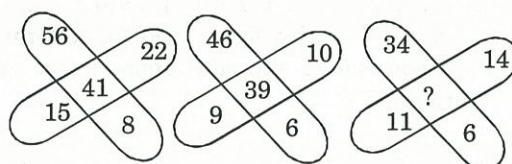
- (a) 7 km East (b) 10 km East
(c) 17 km East (d) 24 km East

9. Which of the following diagrams correctly represents the relationship among Tennis fans, Cricket players and students.



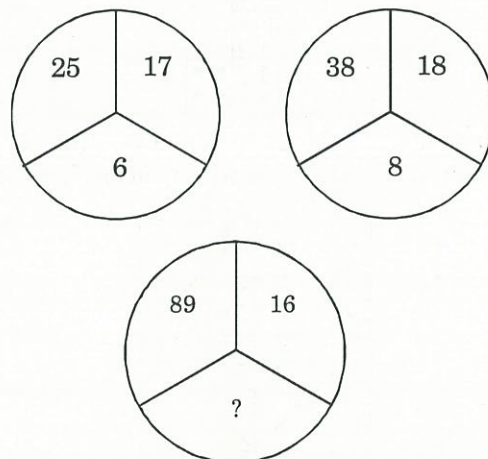
DIRECTIONS (Qs. 10-11) : Find the missing number in the following sets of number around the circle from the choice given below :

10.



- (a) 12 (b) 25 (c) 48 (d) 52

11.



- (a) 13 (b) 15 (c) 17 (d) 19

DIRECTION (Q. 12) : In the following questions, a figure series is given out of which the last figure is missing. Find which one would complete the series.

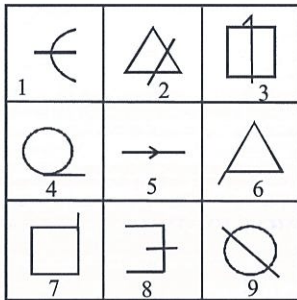


A B C D



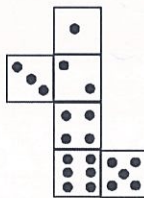
(a) (b) (c) (d)

13. Group the following figures into three classes on the basis of identical properties.



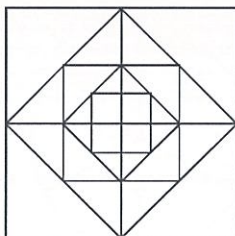
- (a) 1, 3, 9; 2, 5, 8; 4, 6, 7 (b) 4, 8, 9; 1, 2, 5; 3, 6, 7
(c) 2, 5, 9; 1, 3, 8; 2, 6, 7 (d) 1, 8, 9; 4, 6, 7; 2, 3, 5

14. When the following figure is folded to form a cube, how many dots would lie opposite the face bearing five dots ?



- (a) 1 (b) 2 (c) 3 (d) 4

15. What is the number of squares in the fig ?



- (a) 12 (b) 13 (c) 15 (d) 17

16. If the word LEADER is coded as 20-13-9-12-13-26, how would you write LIGHT?

- (a) 20-15-16-18-23 (b) 20-17-15-16-28
(c) 20-16-15-17-22 (d) 20-16-17-15-27

17. In a line, Naresh is 17th from the left & 22nd from the right. How many students are there in the line?

- (a) 40 (b) 38
(c) 39 (d) 37

18. If '-' denotes '+'

'+' denotes '×'

'÷' denotes '×'

'×' denotes '÷'

then $27 \times 3 + 6 \times 9 - 8 = ?$

- (a) 35 (b) 14
(c) 15 (d) 14.5

19. A group of friends are sitting in an arrangement one each at the corner of an octagon. All are facing the centre. Mahima is sitting diagonally opposite Rama, who is on Sushma's right. Ravi is next to Sushma and opposite Girdhar, who is on Chandra's left. Savitri is not on mahima's right but opposite Shalini. Who is on Shalini's right?

- (a) Ravi (b) Mahima
(c) Girdhar (d) Rama

DIRECTIONS (Qs. 20-21) : Select the related word / number from the given alternatives.

20. Length : Metre :: Power : ?

- (a) Calories (b) Degree
(c) Watt (d) Kilogram

21. 7 : 56 :: 9 : ?

- (a) 63 (b) 81
(c) 90 (d) 99

22. Find the answer figure which completes the question figure.

Question Figure:



Answer Figures:



- (a) (b) (c) (d)

23. In the following question, a piece of paper is folded and cut as shown below in the question figures. From the given answer figures, indicate how it will appear when opened.

Question Figures:

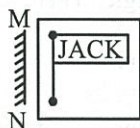


Answer figures:

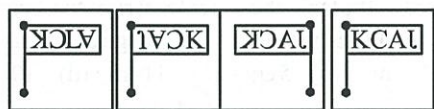


24. If a mirror is placed on the line MN, then which of the answer figures is the right image of the given figure?

Question Figure :



Answer Figures :



25. In certain code, RAGHAVAN is written as GARVAHNA. In that code which word will be written as MATHAVAN?
- (a) TAMVAHNA (b) TAMVAHAN
(c) TAMHAVNA (d) MATVAHNA

MATHEMATICS

26. If N is a natural number then, when N^3 is divided by 9, it leaves a remainder 'r'. What can you say about 'r'?
- (a) It is a perfect cube (b) It is a perfect square
(c) It is equal to N (d) None of these.
27. If $\sqrt{3^n} = 81$. Then, n is equal to
(a) 2 (b) 4 (c) 6 (d) 8
28. Find the value of

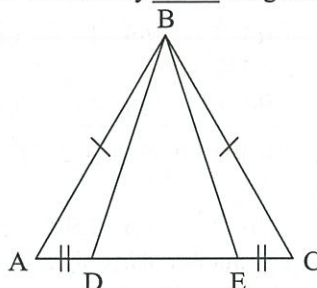
$$\frac{2}{3} \times \frac{3}{\frac{5}{6} \div \frac{2}{3} \text{ of } 1\frac{1}{4}}$$

- (a) $\frac{1}{2}$ (b) $\frac{2}{3}$ (c) 1 (d) 2

29. $\frac{2}{3} \times \frac{4}{5} \times \frac{18}{4} = ?$

- (a) $\frac{10}{3}$ (b) $\frac{12}{5}$ (c) $\frac{13}{5}$ (d) 12

30. It is given that $AB = BC$ and $AD = EC$. Then $\triangle ABE \cong \triangle CBD$ by _____ congruency.

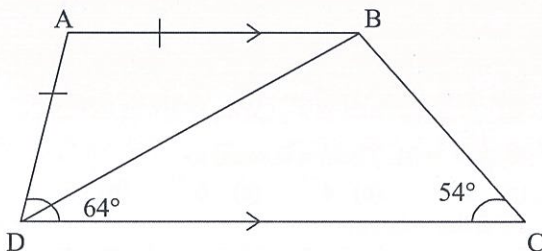


- (a) SSS (b) ASA (c) SAS (d) AAS
31. If angles A, B, C, D of a quadrilateral ABCD taken in order are in the ratio 3 : 7 : 6 : 4, then ABCD is a
(a) rhombus (b) parallelogram
(c) trapezium (d) kite
32. If the diagonals of a rhombus are 24 cm and 10 cm, then the area and perimeter of the rhombus are respectively
(a) 120 sq cm, 52 cm (b) 240 sq cm, 52 cm
(c) 120 sq cm, 64 cm (d) 240 sq cm, 64 cm
33. If 20% of $a = b$, then b% of 20 is same as
(a) 8% of a (b) 6% of a
(c) 4% of a (d) 10% of a
34. The L.C.M. of two numbers is 28 times of their H.C.F. The sum of their L.C.M. and H.C.F. is 1740. If one of the numbers is 240, find the other number.
(a) 240 (b) 620 (c) 540 (d) 420
35. The digit in the units' place in the square root of 15876 is
(a) 8 (b) 6 (c) 4 (d) 2
36. A profit of ₹ 6000 is to be distributed among A, B and C in the ratio 3 : 4 : 5, respectively. How much more will C get than B?
(a) ₹500 (b) ₹1200 (c) ₹2000 (d) ₹2500
37. If the price of a book is first decreased by 25% and then increased by 20%, the net change in the price of the book is
(a) 10% decrease (b) 5% decrease
(c) No change (d) 5% increase

38. If the simple interest for 6 years be equal to 30% of the principal, it will be equal to the principal after
 (a) 10 years (b) 20 years
 (c) 22 years (d) 30 years
39. There are four prime numbers written in ascending order. The product of the first three is 385 and that of last three is 1001. Find the first number.
 (a) 5 (b) 7 (c) 11 (d) 17
40. 78, 79, 81, ?, 92, 103, 119
 (a) 88 (b) 85 (c) 84 (d) 83
41. $\sqrt{(0.798)^2 + 0.404 \times 0.798 + (0.202)^2} + 1$ is equal to
 (a) 0 (b) 2 (c) 1.596 (d) 0.404
42. Find the greatest number of five digits which when divided by 4, 6, 14 and 20 leaves respectively 1, 3, 11 and 17 as remainder
 (a) 99930 (b) 99960 (c) 99997 (d) 99957
43. By selling 100 pencils, a shopkeeper gains the S.P. of 20 pencils. His gain percent is
 (a) 25% (b) 20% (c) 15% (d) 12%
44. The ratio of two numbers is $a : b$. If first of them is x , then second is
 (a) $\frac{ab}{x}$ (b) $\frac{b}{ax}$ (c) $\frac{b}{a+b} \times x$ (d) $\frac{bx}{a}$
45. If \div means $+$, $-$ means \div , \times means $-$ and $+$ means \times , then

$$\frac{(36 \times 4) - 8 \times 4}{4 + 8 \times 2 + 16 \div 1} = ?$$

 (a) 0 (b) 8 (c) 12 (d) 16
46. The sum of the numerator and the denominator of a fraction is 11. If 1 is added to the numerator and 2 is subtracted from the denominator, it becomes $\frac{2}{3}$. The fraction is:
 (a) $\frac{5}{6}$ (b) $\frac{3}{8}$ (c) $\frac{4}{7}$ (d) $\frac{1}{10}$
47. A man buys an article for ₹ 80 and marks it at ₹ 120. He then allows a discount of 40%. What is the loss or gain %?
 (a) 12% gain (b) 12% loss
 (c) 10% gain (d) 10% loss
48. What is the compound interest on an amount of ₹ 4800 at the rate of 6 percent p.a. at the end of 2 years?
 (a) ₹ 544.96 (b) ₹ 576.00
 (c) ₹ 593.28 (d) ₹ 588.00
49. If 5 spiders can catch 5 flies in 5 minutes, how many flies can 100 spiders catch in 100 minutes?
 (a) 100 (b) 500 (c) 1000 (d) 2000
50. A, B, C and D are playing cards. A and B are partners D faces towards North. If A faces towards west, then who faces towards south?
 (a) B (b) C
 (c) D (d) Data inadequate
51. The sides of a triangle are 5, 12 and 13 units. A rectangle of width 10 units is constructed equal in area to the area of the triangle. Then, the perimeter of the rectangle is:
 (a) 30 units (b) 26 units
 (c) 13 units (d) 15 units
52. A rectangular tank 25 cm long and 20 cm wide contains 4.5 litres of water. When a metal cube is lowered in the tank, the water level rises to a height of 11 cm. Find the length of each edge of the cube?
 (a) 15 cm (b) 5 cm (c) 11 cm (d) 10 cm
53. If Dennis is $\frac{1}{3}$ rd the age of his father Keith now and was $\frac{1}{4}$ th the age of his father 5 years ago, then how old will his father Keith be 5 years from now?
 (a) 20 years (b) 45 years
 (c) 40 years (d) 50 years
54. In a trapezium ABCD, $AB \parallel DC$, $AB = AD$, $\angle ADC = 64^\circ$ and $\angle BCD = 54^\circ$. Find $\angle DBC$.



- (a) 64° (b) 72° (c) 94° (d) 116°

55. If the volume of a right circular cylinder with its height equal to the radius is $25\frac{1}{7} \text{ cm}^3$, then the radius of the cylinder is equal to:
 (a) 1 cm (b) 3 cm (c) 4 cm (d) 2 cm
56. The difference between compound interest and simple interest accrued on an amount at the end of 3rd year at a rate of 10% is 77.5 rupees. What is amount?
 (a) 2600 (b) 2500 (c) 2800 (d) 2950
57. A person sells two horses for rupees 1200/ each. On the first at a profit of 20% and second at a loss of 20%. The overall profit/loss in percentage is ____?
 (a) 4% loss (b) 4% profit
 (c) 5% loss (d) 5% profit
58. The average of $\frac{5}{16}$ and $\frac{3}{8}$ is ____?
 (a) 0.5425 (b) 0.2585 (c) 0.3475 (d) 0.4385
59. Efficiency of A, B and C is in the ratio 4:5:6. What is the ratio of the time in which they complete the work?
 (a) 5:4:3 (b) 15:12:10
 (c) 15:10:12 (d) 10:12:15
60. Someone purchase 5 dozen of egg in ₹ 100. Out of which 20% eggs were found broken. At what rate he should sell eggs so that he gets 10% profit?
 (a) 2.29 (b) 3.25 (c) 2.75 (d) 3.75
61. A bank give 16% interest per annum compounded semi annually. What interest a man get on amount of ₹ 10000 in 2 years?
 (a) 12665 (b) 13205 (c) 14515 (d) 13605
62. Find the value of $\sqrt{0.0081} + \sqrt{0.0064}$?
 (a) 0.27 (b) 0.7 (c) 0.17 (d) 0.4
63. Find the value of $216^{0.16} \times 16^{0.18}$?
 (a) 4 (b) 6 (c) 8 (d) 2
64. If there is 25% increase in the cost of sugar by what % consumption should be decreased in order to maintain expenditure?
 (a) 25% (b) 20% (c) 32.5% (d) 15%
65. Average marks of a class are 70. If average marks of fail students are 40 and pass students are 80 marks. Find percentage of pass students?
 (a) 25% (b) 50% (c) 65% (d) 75%
66. The population of a village increase 5% per annum. It's population at the end of 2016 was 1852200. What was its population in 2014?
 (a) 1680000 (b) 1640000
 (c) 1720000 (d) 1560000
67. 250 ml of mixture contains milk and water in the ratio of 7:2. How much more milk must be added to get a new mixture containing milk and water in the ratio of 4:1?
 (a) 50ml (b) 42ml (c) 28ml (d) 32ml
68. The average age of 25 students is 16years. If a teacher is added the average age becomes 18 years. What is the age of teacher?
 (a) 68 years (b) 62 years
 (c) 64 years (d) 70 years
69. A and B can do a piece of work in 10 days. B and C can do it in 12 days. A and C can do it in 15 days. How long will A take to do it alone?
 (a) 20 days (b) 24 days
 (c) 30 days (d) 40 days
70. A bus started its journey from Pune and reached Mumbai in 44 minutes at its average speed of 50 km/hr. If the average speed of the bus is increased by 5km/hour, how much time will it take to cover the same distance?
 (a) 40 minutes (b) 38minutes
 (c) 36 minutes (d) 31minutes
71. The price of onions has been increased by 50% in order to keep the expenditure on onions the same, the percentage of reduction in consumption has to be.
 (a) 50% (b) $33\frac{1}{3}$ (c) 33% (d) 30%
72. The ratio of the numbers of males and females in a club is 5 : 6. If 22 females leave the club, the ratio becomes reversed. The number of males in the club is
 (a) 40 (b) 50 (c) 55 (d) 60
73. The sum of two numbers is 36 and their H.C.F and L.C.M. are 3 and 105 respectively. The sum of the reciprocals of two numbers is
 (a) $\frac{2}{35}$ (b) $\frac{3}{25}$ (c) $\frac{4}{35}$ (d) $\frac{2}{25}$
74. A teacher wants to arrange his students in an equal number of rows and columns. If there are 1369 students, the number of students in the last row are
 (a) 37 (b) 33
 (c) 63 (d) 47

75. A farmer divides his herd of n cows among his four sons, so that the first son gets one-half the herd, the second one-fourth, the third son $\frac{1}{5}$ and the fourth son 7 cows. Then the value of n is
- (a) 240 (b) 100
(c) 180 (d) 140

LANGUAGE TEST

DIRECTIONS (Qs. 76-80): Choose the best option to complete each sentence.

76. A lot of _____ improves one's vocabulary.
(a) reading (b) listening
(c) seeking (d) speaking
77. I _____ to tell you the truth, but I am scared.
(a) should (b) could
(c) may (d) ought
78. A place where coins are made is called
(a) ostler (b) mint
(c) kiln (d) creche
79. The thief stood _____ in the police station.
(a) charmingly (b) silently
(c) cruelly (d) happily
80. He was trying hard to put the baggage _____ the trolley.
(a) in (b) on (c) near (d) under

DIRECTIONS (Qs. 81-83): Choose the correct meaning from the given options.

81. Choose the opposite of the bold word in each sentence.
It was a **desolate** place.
(a) fertile (b) uninhabited
(c) solitary (d) lonely
82. He is quite **susceptible** to falling.
(a) vulnerable (b) acceptable
(c) capable (d) immune
83. It is **imperative** that you restrict everything that can make you sick.
(a) insignificant
(b) important
(c) vital
(d) burning

DIRECTIONS (Qs. 84-86): Change the following sentences into passive form.

84. I know your strong points.
(a) Your strong points are known to me.
(b) Strong points of yours are known by me.
(c) Your points that are strong are known by me.
(d) Your strong point is known by him.
85. (a) Harry kept his schedule busy.
(b) Harry's schedule was kept busy.
(c) Harry's schedule will be busy.
(d) Harry's schedule is being kept busy.
(e) Harry's schedule is busy.
86. They gave her a gift.
(a) A gift was given to her.
(b) A gift has been given to her.
(c) She has got a gift.
(d) A gift is being given to her.

DIRECTIONS (Qs. 87-90): Read the editorial given below and answer the questions that follow.

A new study by European Environmental Agency (EEA) evaluates how European ecosystems were affected by acidifying and eutrophying air pollutants in the past decades, and projects the levels of impacts in the near future under a scenario where the 2012 amended Gothenburg Protocol under the convention on Long Range Transboundary Air Pollution (LRTAP) is assumed to be fully implemented by 2020. The deposition of acidifying air pollutants causes acidification of surface waters (lakes, rivers and streams) and forest soils leading to loss of nutrients such as potassium and magnesium from soils and the release of toxic aluminium into soils and waters.

87. What is meant by protocol?
(a) An agreement
(b) A treaty
(c) Understanding between countries
(d) All of these
88. What does the acidifying of air lead to?
(a) Loss of nutrients from soils
(b) Release of toxic elements into soils and water
(c) Acidification of lakes and streams
(d) All of these
89. EEA stands for
(a) European Ecosystem Agency
(b) European Environment Agency
(c) European Environmental Agency
(d) None of these

90. What do you understand by an ecosystem ?
- Physical environment of an area constitutes an ecosystem.
 - All the living beings regardless of the environment constitute an ecosystem.
 - A system formed by the interaction of the organisms with their physical environment.
 - All of these

DIRECTIONS (Qs. 91-94): Choose the best option which can complete the incomplete sentences correctly and meaningfully.

91. Unless you work harder, you will fail means _____
- if you fail, you will work harder.
 - you must at least plan well, then you will not fail.
 - hardly you will fail, if you do not desire so.
 - if you do not put more efforts, then you will fail.
92. "You are thinking very highly about Ravi but he is not so" means _____
- Ravi is as good as you think about him.
 - you have a good opinion about Ravi but he is not as good as you think.
 - your view about Ravi is philosophical, keep it up.
 - you have a good opinion about Ravi but he does not have a good opinion about you.
93. Owing to the acute power shortage, the people of our locality have decided to _____
- resort to abundant use of electricity for illumination.
 - off-switch the electrical appliance while not in use.
 - explore other avenues for utilising the excess power.
 - resort to use of electricity only when it is inevitable.
94. "The food in this hotel is no match to what were forced at late hours in Hotel Kohinoor" means _____.
- the food in this hotel is quite good compared to what we ate at Kohinoor.
 - hotel Kohinoor served us good quality food than what we get here.
 - both hotels have maintained good quality of food.
 - both hotels serve poor quality of food.

DIRECTIONS (Qs. 95-98) : Choose the most appropriate option that explains the correct meaning of the following idioms:

95. A man of straw
- A man with no means
 - A generous man
 - A man of character
 - A man of no substance
96. To catch a tartar
- To catch a dangerous person
 - To meet with disaster
 - To make a deal
 - To hurry up
97. To have an axe to grind
- To have a strong personal opinion
 - To fail to arouse interest
 - To have no result
 - To work for both sides
98. To play second fiddle
- To be happy, cheerful and healthy
 - To reduce importance of one's senior
 - To support the role and view of another person
 - To do back seat driving

DIRECTIONS (Qs. 99-100) : Choose the correctly spelt word:

- | | |
|----------------------|-----------------|
| 99. (a) Varmillion | (b) Vermillion |
| (c) Varmilion | (d) Vermilion |
| 100. (a) Scryptorium | (b) Scriptorium |
| (c) Screptorium | (d) Scriptorium |

GENERAL KNOWLEDGE

101. Where is Lothal, a prominent city of the ancient Indus Valley Civilization, located?
- Gujarat
 - Rajasthan
 - Punjab
 - Madhya Pradesh
102. Recently who became chief minister of Assam?
- V.P. Singh Badnore
 - Nitish Kumar
 - Mamta Banerjee
 - Himanta Biswa Sarma
103. The theme of 2021 International Yoga Day :
- Yoga for Harmony & Peace
 - Connect the Youth
 - Yoga for wellness
 - Yoga for Heart

104. Which of the following places was chosen by Gandhiji to start his first Satyagrah?
 - (a) Ahmedabad (b) Champaran
 - (c) Gaya (d) Porbandar
105. Who among the following is a recipient of Padma Vibhushan 2021?
 - (a) SP Balasubramaniam
 - (b) Lata Mangeshkar
 - (c) Javed Akhtar
 - (d) A R Rahaman
106. Which city is the capital of Uzbekistan?
 - (a) Hanoi (b) Ankara
 - (c) Tashkent (d) Tehran
107. Thomas cup is associated with which game?
 - (a) Football (b) Cricket
 - (c) Badminton (d) Chess
108. Who was the Defence Minister of India during the Indo-China War of 1962?
 - (a) RN Thapar
 - (b) Govind Ballabh Pant
 - (c) VK Krishna Menon
 - (d) Jagjivan Ram
109. The International Date Line runs through which of the following oceans?
 - (a) Pacific ocean (b) Indian Ocean
 - (c) Atlantic Ocean (d) none of these
110. India won its first Olympic hockey gold in-
 - (a) 1928 (b) 1932
 - (c) 1936 (d) 1948
111. Guwahati High Court is the judicature of
 - (a) Nagaland
 - (b) Arunachal Pradesh
 - (c) Assam
 - (d) All of the above
112. Film and TV institute of India is located at
 - (a) Pune (b) Rajkot
 - (c) Pimpri (d) Perambur
113. The power to decide an election petition is vested in the -
 - (a) Parliament
 - (b) Supreme Court
 - (c) High courts
 - (d) Election Commission
114. Jeev Milkha Singh is associated with which sports?
 - (a) Volleyball (b) Golf
 - (c) Athletics (d) Hockey
115. Michael Ferreira is related to which sports?
 - (a) Car racing (b) Badminton
 - (c) Hockey (d) Billiards
116. Where is headquarter of World Health Organization (WHO) located?
 - (a) Hague (b) Washington
 - (c) Geneva (d) Beijing
117. Bharatanatyam is the classical dance of which state?
 - (a) Kerala (b) Andhra Pradesh
 - (c) Tamil Nadu (d) Karnataka
118. Which of the following film won Oscar in the best fim category in 2021?
 - (a) Parasite (b) Nomadland
 - (c) Green Book (d) Moonlight
119. Keoladeo National Park is located in which state?
 - (a) Punjab (b) Tamil Nadu
 - (c) Rajasthan (d) Karnataka
120. On which river the Baglihar Dam is built?
 - (a) Brahmaputra (b) Ganga
 - (c) Chenab (d) Godavari
121. The first meeting of Indian National Congress was held at which place?
 - (a) Bombay (b) Delhi
 - (c) Nagpur (d) Ahemdabad
122. Who among the following is the current RBI governor?
 - (a) Shaktikanta Das (b) Urjit Patel
 - (c) Raghuram Rajan (d) Viral Acharya
123. Recently, which fiction novel got Pulitzer Prize in 2021?
 - (a) Less
 - (b) The Nickel Boys
 - (c) The Overstory
 - (d) The Night Watchman
124. Vijay Rupani is Chief Minister of Which State?
 - (a) Goa
 - (b) Gujarat
 - (c) Jammu and Kashmir
 - (d) Haryana
125. In which country Asian Games held maximum number of times?
 - (a) Japan
 - (b) Thailand
 - (c) China
 - (d) India

HINTS & EXPLANATIONS

1. (c) First letter : +2, +3, +4, +5 etc.
Second letter : -2, -3, -4, -5 etc.
2. (c) +1, +2, +3, +4 in letters; +3, +5, +7, +9 in numbers.
3. (d) The new letter sequence is EDRPSEISNO.
The seventh letter from the right is P.

D E P R E S S I O N

 1 2 3 4 5 6 7 8 9 10

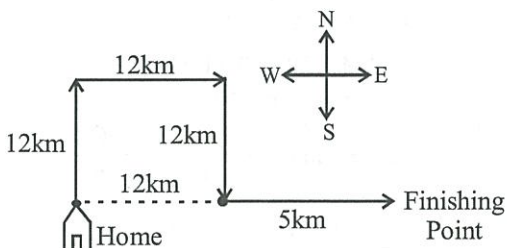
4. (a) Arranging the words in alphabetical order,
we have
Random, Restrict, Robber, Rocket.
So, the word in the 2nd position is Restrict and
the correct answer is (a)
5. (c) Deepak's new position is 22nd from left.
But it is the same as Madhu's earlier position i.e.
12th from the right.
 \therefore there are $(22 + 12 - 1)$ i.e. 33 boys in the row.
6. (d)

1. Mili $\xrightarrow{\text{(Sister)}}$ Ajay $\xrightarrow{\text{(Brother)}}$
Vijay $\xrightarrow{\text{(daughter)}}$ Mehul

2. Sanjay $\xrightarrow{\text{(brother)}}$ Rahul

There are two sets of relationship information given is incomplete and no relation can be established between the two sets.

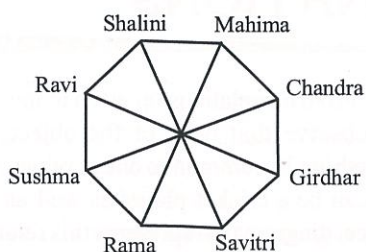
7. (a) Father's wife means mother ; mother's only son means himself and thus the girls is the daughter of the man.
8. (c) $(12 \text{ km} + 5 \text{ km} = 17 \text{ km})$



9. (a) From the relationship given in the question, we observe that each of the objects carries something in common to one another. A Tennis fan can be a cricket player as well as student. Hence, diagram (a) represents this relationship.
10. (b) We have $(56 + 15) - (22 + 8) = 41$, $(46 + 9) - (10 + 6) = 39$
So, missing number
 $= (34 + 11) - (14 + 6) = 25$.
11. (b) The sum of the two numbers in the upper part is 7 times the number in the lower part.
So, missing number
 $= (89 + 16) \div 7 = 15$
12. (d) In each step, the shaded portion and small dot move 90° CW and inside dots take new place alternately.
13. (d) 1, 8, 9 are figures bisected by a straight line
4, 6, 7 are figures having an extended arm
2, 3, 5 are figures intersected by a line.
Thus the given figure containing nine figures may be divided into three pairs : (1, 8, 9), (4, 6, 7) and (2, 3, 5).
Hence the answer is (d).
14. (c) When this figure is folded to form a cube then the face bearing three dots will lie opposite the face bearing five dots.
15. (d) We have three squares with vertical and horizontal sides. Each such square has $1^2 + 2^2 = 5$ squares in it. Thus, there are 15 such squares. In addition, we have two obliquely placed squares.
Hence, total no. of squares = 17
16. (b) $L \Rightarrow 12 + 8 = 20$ Therefore,
 $E \Rightarrow 5 + 8 = 13$ $L \Rightarrow 12 + 8 = 20$
 $A \Rightarrow 1 + 8 = 9$ $I \Rightarrow 9 + 8 = 17$
 $D \Rightarrow 4 + 8 = 12$ $G \Rightarrow 7 + 8 = 15$
 $E \Rightarrow 5 + 8 = 13$ $H \Rightarrow 8 + 8 = 16$
 $R \Rightarrow 18 + 8 = 26$ $T \Rightarrow 20 + 8 = 28$
17. (b) Naresh is 17th from left and 22nd from the right.
So, total number of students in the line
 $= 17 + 22 - 1 = 38$

18. (b)

19. (a)



Ravi is to the right of Shalini.

20. (c) Metre is a unit of length likewise watt is a unit of power.

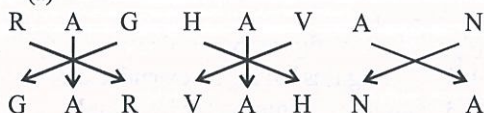
21. (c) The relationship is $x : x(x+1)$

22. (b) Option (b) is complete the questions figure completely.

23. (d)

24. (c)

25. (a)



Similarly,



26. (a) It is a perfect cube.

27. (d) $\sqrt{3^n} = 81$

$$\Rightarrow 3^{n/2} = 3^4$$

$$\Rightarrow \frac{n}{2} = 4$$

$$\Rightarrow n = 8.$$

28. (d) $\frac{2}{3} \times \frac{3}{\frac{5}{6} \div \frac{2}{3} \text{ of } 1\frac{1}{4}}$

$$= \frac{2}{3} \times \frac{3}{\frac{5}{6} \div \frac{2}{3} \times \frac{5}{4}} = \frac{2}{3} \times \frac{3}{\frac{5}{6} \div \frac{5}{6}}$$

$$= \frac{2}{3} \times \frac{3}{1} = 2.$$

29. (b)

30. (c) Given, $AD = EC$

$$\Rightarrow AD + DE = DE + EC$$

$$\Rightarrow AE = DC$$

$$\text{Also, } AB = BC$$

$$\Rightarrow \angle BCA = \angle BAC \text{ (isos. } \Delta \text{ property)}$$

$$\Rightarrow \angle BCD = \angle BAE$$

$$\therefore \text{ In } \triangle ABE \text{ and } \triangle CBD,$$

$$AB = CB \text{ (Given)}$$

$$AE = DC \text{ (Proved above)}$$

$$\angle BAE = \angle BCD \text{ (Proved above)}$$

$$\therefore \triangle ABE \cong \triangle CBD \text{ (by SAS)}$$

31. (c)

32. (a) Each side of the rhombus

$$= \sqrt{\left(\frac{24}{2}\right)^2 + \left(\frac{10}{2}\right)^2}$$

$$= \sqrt{12^2 + 5^2} = \sqrt{144 + 25}$$

$$= \sqrt{169} = 13 \text{ cm}$$

$$\therefore \text{ Perimeter} = 4 \times 13 \text{ cm} = 52 \text{ cm.}$$

Area of the rhombus

$$= \frac{1}{2} \times 24 \text{ cm} \times 10 \text{ cm} = 120 \text{ cm}^2$$

33. (c) 20% of $a = b$

$$\Rightarrow \frac{20}{100} a = b$$

$$\text{Then, } b\% \text{ of } 20 = \frac{b}{100} \times 20$$

$$= \frac{20a}{100} \times \frac{1}{100} \times 20$$

$$= \frac{1}{5} a \times \frac{1}{100} \times 20 = 4\% \text{ of } a$$

34. (d) L.C.M. = $28 \times \text{H.C.F.}$

$$\text{Also, L.C.M.} + \text{H.C.F.} = 1740$$

$$\Rightarrow 28\text{H.C.F.} + \text{H.C.F.} = 1740$$

$$\Rightarrow 29\text{H.C.F.} = 1740$$

$$\Rightarrow \text{H.C.F.} = \frac{1740}{29} = 60$$

$$\Rightarrow \text{L.C.M.} = 28 \times 60 = 1680$$

Since, one number = 240

$$\therefore \text{ Other number} = \frac{\text{H.C.F.} \times \text{L.C.M.}}{\text{One number}}$$

$$= \frac{60 \times 1680}{240} = 420.$$

35. (b)

$$\begin{array}{r}
 1 \overline{) 15876} \\
 \underline{-1} \\
 22 \\
 \underline{-44} \\
 246 \\
 \underline{-1476} \\
 0
 \end{array}$$

$$\therefore \sqrt{15876} = 126$$

$$\Rightarrow \text{Digit in units' place in } \sqrt{15876} = 6.$$

$$36. (a) \text{ C's share} = \frac{5}{12} \times ₹6000 = ₹2500$$

$$\text{B's share} = \frac{4}{12} \times ₹6000 = ₹2000$$

$$\therefore \text{C gets ₹500 more than B.}$$

$$37. (a) \text{ Let the original price of the book be ₹100}$$

$$\text{Decreased price of the book} = ₹75$$

$$\text{Increased price of the book after 20\% increase}$$

$$= \frac{120}{100} \times ₹75 = ₹90$$

$$\therefore \text{Net change in price}$$

$$= ₹10 \text{ decrease}$$

$$\therefore \% \text{ change} = \frac{10}{100} \times 100 = 10\% \text{ decrease}$$

$$38. (b) \text{ Let the principal} = ₹x \text{ and rate of interest} = R\% \text{ p.a.}$$

$$\text{Then, S.I.} = 30\% \text{ of } ₹x = \frac{30}{100} \times x$$

$$\therefore \frac{x \times R \times 6}{100} = \frac{30}{100} \times x$$

$$\Rightarrow R = \frac{30}{6} = 5\% \text{ p.a.}$$

Let the time in which the principal is equal to simple interest be t years, then

$$\frac{x \times 5 \times t}{100} = x$$

$$\Rightarrow t = \frac{100}{5} \text{ years} = 20 \text{ years}$$

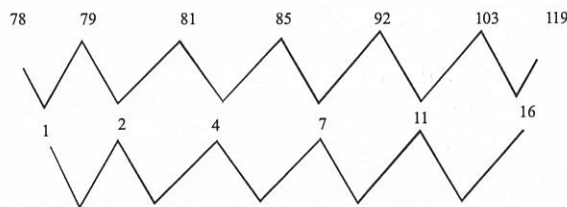
$$39. (a) \text{ Let the numbers be } a, b, c, d. \text{ Then, } abc = 385 \text{ and } bcd = 1001$$

$$\Rightarrow \frac{abc}{bcd} = \frac{385}{1001}$$

$$\Rightarrow \frac{a}{d} = \frac{5}{13}$$

$$\Rightarrow a = 5, d = 13.$$

$$40. (b) \text{ Differences of the first set of differences are increasing by 1 viz.}$$



$$41. (b)$$

$$\sqrt{(0.798)^2 + 0.404 \times 0.798 + (0.202)^2} + 1$$

$$= \sqrt{(0.798)^2 + 2 \times 0.202 \times 0.798 + (0.202)^2} + 1$$

$$= \sqrt{(0.798 + 0.202)^2} + 1 = \sqrt{1} + 1$$

$$= 1 + 1 = 2.$$

$$42. (d) \text{ Common difference between divisors and respective remainders}$$

$$= (4 - 1) = (6 - 3) = (14 - 11)$$

$$= (20 - 17) = 3$$

$$\text{L.C.M. of } (4, 6, 14, 20)$$

$$= 2 \times 2 \times 3 \times 7 \times 5 = 420$$

2	4, 6, 14, 20
2	2, 3, 7, 10
	1, 3, 7, 5

$$\text{Greatest number of five digits} = 99999$$

Dividing 99999 by 420 and subtracting the remainder 39 from 99999, we get

$$99999 - 39 = 99960$$

$$\therefore \text{The required number}$$

$$= 99960 - 3 = 99957.$$

43. (a) S.P. of 100 pencils – C.P. of 100 pencils
= S.P. of 20 pencils

$$\Rightarrow \text{S.P. of 80 pencils} = \text{C.P. of 100 pencils}$$

$$\text{Let C.P. of 1 pencil} = ₹1.$$

Then,

$$\text{S.P. of 80 pencils} = ₹100$$

$$\text{C.P. of 80 pencils} = ₹80$$

$$\therefore \text{Profit \%} = \frac{100 - 80}{80} \times 100$$

$$= \frac{20}{80} \times 100 = 25\%.$$

44. (d) Let the required number be y.

$$a : b :: x : y$$

$$a \times y = b \times x$$

$$y = \frac{bx}{a}$$

45. (a) Using the correct symbols, we have
Given expression

$$= \frac{(36 - 4) \div 8 - 4}{4 \times 8 - 2 \times 16 + 1}$$

$$= \frac{32 \div 8 - 4}{32 - 32 + 1}$$

$$= \frac{4 - 4}{0 + 1} = 0.$$

46. (b) Let the numerator be x.

Then,

$$\text{denominator} = 11 - x$$

$$\text{Given, } \frac{x + 1}{11 - x - 2} = \frac{2}{3}$$

$$\Rightarrow 3x + 3 = 2(9 - x)$$

$$\Rightarrow 3x + 3 = 18 - 2x$$

$$\Rightarrow 5x = 15$$

$$\Rightarrow x = 3$$

$$\therefore \text{Numerator} = 3,$$

$$\text{Denominator} = 11 - 3 = 8$$

$$\therefore \text{Fraction} = \frac{3}{8}.$$

47. (d) C.P. = ₹80,
M.P. = ₹120,
Discount = 40%

$$\therefore \text{S.P.} = 60\% \text{ of } ₹120$$

$$= \frac{60}{100} \times ₹120 = ₹72$$

$$\therefore \text{Loss} = ₹80 - ₹72 = ₹8$$

$$\text{Loss \%} = \frac{8}{80} \times 100 = 10\%.$$

48. (c) $P = ₹4800, r = 6\% \text{ p.a., } n = 2$

$$\therefore \text{C.I.} = A - P = P \left(1 + \frac{r}{100} \right)^n - P$$

$$= 4800 \left(1 + \frac{6}{100} \right)^2 - 4800$$

$$= 4800 \times \frac{53 \times 53}{50 \times 50} - 4800$$

$$= 5393.28 - 4800 = ₹593.28.$$

49. (d) 5 spiders in 5 minutes catch

$$= 5 \text{ flies}$$

$$5 \text{ spiders in 1 minute catch}$$

$$= \frac{5}{5} \text{ flies}$$

$$1 \text{ spider in 1 minute catches}$$

$$= \frac{5}{5 \times 5} \text{ flies}$$

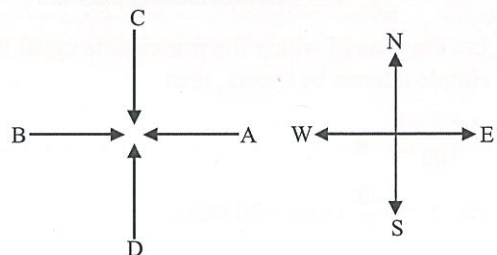
$$1 \text{ spider in 100 minutes catches} = \frac{5}{5 \times 5} \times 100$$

$$\text{flies}$$

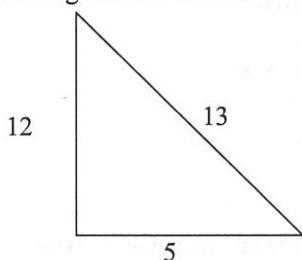
$$100 \text{ spiders in 100 minutes catch}$$

$$= \frac{5}{5 \times 5} \times 100 \times 100 \text{ flies} = 2000 \text{ flies.}$$

50. (b) As per the data, D faces North. A faces towards west. So, its partner B will face towards A and hence towards East. So, C who will face D will face towards south.



51. (b) By Pythagoras theorem, we find that the given triangle is a right-angled triangle with 12 as height and 5 as base.



\therefore Area of the triangle

$$= \frac{1}{2} \times 12 \times 5 \text{ sq. units} = 30 \text{ sq. units}$$

\therefore Area of the rectangle
= length \times breadth = 30

$$\Rightarrow \text{Length} = \frac{30}{\text{breadth}} = \frac{30}{10} \\ = 3 \text{ units}$$

\therefore Perimeter of the rectangle
= $2 \times (10 + 3)$
= 26 units.

52. (d) Height of the water in the tank

$$= \frac{4.5 \times 1000}{25 \times 20} \text{ cm}$$

$$= 9 \text{ cm } (\because 1 \text{ litres} = 1000 \text{ cm}^3)$$

\therefore Rise in height = 11 cm - 9 cm
= 2 cm

\therefore Volume of cube = Volume of water displaced
= 25 cm \times 20 cm \times 2 cm
= 1000 cm³

\Rightarrow Each edge of the cube
= $\sqrt[3]{1000} \text{ cm} = 10 \text{ cm}.$

53. (d) Let Keith's age now be x year Then,

$$\text{Dennis's age now} = \frac{x}{3} \text{ years}$$

$$\text{Keith's age 5 years ago} = (x - 5) \text{ years}$$

$$\text{Dennis's age 5 years ago} = \left(\frac{x}{3} - 5\right) \text{ years}$$

$$\text{Given, } \left(\frac{x}{3} - 5\right) = \frac{1}{4}(x - 5)$$

$$\Rightarrow \frac{x - 15}{3} = \frac{x - 5}{4}$$

$$\Rightarrow 4x - 60 = 3x - 15$$

$$\Rightarrow x = 45$$

\therefore Keith's age 5 years from now
= (45 + 5) years = 50 years

54. (c) $\angle DAB = 180^\circ - \angle ADC$
= $180^\circ - 64^\circ = 116^\circ$

(AB \parallel DC, co-int. \angle s are supp.)

In $\triangle DAB$,

$$DA = AB$$

$$\Rightarrow \angle ABD = \angle ADB \text{ (isos. } \triangle \text{ prop.)}$$

$$\therefore \angle ADB = \frac{180^\circ - 116^\circ}{2} = \frac{64^\circ}{2} \\ = 32^\circ$$

$$\therefore \angle BDC = 64^\circ - 32^\circ = 32^\circ$$

Hence, in $\triangle DBC$,

$$\angle DBC = 180^\circ - (\angle BDC + \angle BCD) \\ = 180^\circ - (32^\circ + 54^\circ) \\ = 180^\circ - 86^\circ = 94^\circ.$$

55. (d) Let the height (h) and radius (r) of the cylinder = x cm

$$\text{Then, } \pi r^2 h = 25 \frac{1}{7}$$

$$\frac{22}{7} x^2 \cdot x = 25 \frac{1}{7}$$

$$\Rightarrow \frac{22x^3}{7} = \frac{176}{7}$$

$$\Rightarrow x^3 = \frac{176}{22} = 8$$

$$\Rightarrow x = 2 \text{ cm}$$

56. (b) From formula, difference between C.I. and S.I. at the end of 3 years.

$$D = \frac{Pr^2}{(100)^2} \left(\frac{300 + r}{100} \right)$$

$$\therefore 77.5 = P \left(\frac{10}{100} \right)^2 \left(\frac{300 + 10}{100} \right)$$

$$77.5 = \frac{P}{100} \left(\frac{31}{10} \right)$$

$$\therefore P = \frac{77.5 \times 1000}{31} = ₹2500$$

57. (a) Cost price of first horse

$$= 1200 \times \frac{100}{120} = 1000$$

Cost price of second horse

$$= 1200 \times \frac{100}{80} = 1500$$

Sum of cost price of two horses

$$= 1000 + 1500 = 2500$$

Sum of selling price of two horses

$$= 1200 + 1200 = 2400$$

$$\text{Loss} = 2500 - 2400 = 100$$

$$\text{Overall percentage loss} = \frac{100}{2500} \times 100 = 4\% (\text{loss})$$

$$58. (c) \text{ Average} = \frac{\frac{5}{16} + \frac{3}{8}}{2}$$

$$= \frac{\frac{5+6}{16}}{2} = \frac{11}{32} = 0.3475.$$

59. (b) We know that efficiency is inversely proportional to the time

So, ratio of time in which they complete the work

$$= \frac{1}{4} : \frac{1}{5} : \frac{1}{6}$$

$$= 15 : 12 : 10$$

So, ratio of time = 15 : 12 : 10

60. (a) 5 dozen = 60

Now, cost price of 60 eggs = ₹100

$$\text{Number of unbroken eggs} = 60 \times \frac{80}{100} = 48$$

to get 10% profit selling price of 48 eggs

$$= 100 \times \frac{110}{100} = 110$$

$$\text{Selling price of each egg} = \frac{110}{48} = 2.292 / \text{eggs}.$$

61. (d) Rate of interest (semi annually) =
- $\frac{16}{2}\% = 8\%$

Time (in semi year) = 4

$$\text{Now, compound interest} = P \left(1 + \frac{r}{100} \right)^t$$

$$= 10000 \left(1 + \frac{8}{100} \right)^4 = 13605$$

$$62. (c) \sqrt{0.0081} + \sqrt{0.0064}$$

$$= \sqrt{(0.09)^2} + \sqrt{(0.08)^2}$$

$$= 0.09 + 0.08 = 0.17$$

$$63. (a) 256^{0.16} \times 16^{0.18}$$

$$(2^8)^{0.16} \times (2^4)^{0.18}$$

$$(2)^{1.28} \times (2)^{0.72}$$

$$= 2^{1.28+0.72}$$

$$= 2^2 = 4$$

64. (b) Let cost price of 1 kg sugar is ₹100

After increase in cost price by 25%

Cost price of 1 kg sugar = 125

Amount of sugar we can purchase in ₹100

$$= \frac{100}{125} = \frac{4}{5} \text{ kg}$$

Percentage decrease in consumption

$$= \left(\frac{1 - \frac{4}{5}}{1} \right) \times 100 = 20\%$$

65. (d) Let number of students fail and pass in the class are x and y respectively.

ATQ,

$$70(x+y) = 40x + 80y$$

$$30x = 10y \Rightarrow y = 3x$$

$$\text{Now, } \frac{y}{x} = 3$$

$$\frac{y}{x+y} = \frac{3}{1+3} \quad \{\text{By componendo \& devedendo}\}.$$

$$\therefore \text{Percentage of pass students} = \frac{3}{4} \times 100 = 75\%$$

66. (a) Let population of the village in 2014 is N.

$$\text{Then, } 1852200 = N \left(1 + \frac{5}{100} \right)^2$$

$$\therefore N = \frac{1852200}{1.05 \times 1.05} = 1680000.$$

67. (c) Amount of milk in the mixture

$$= 250 \times \frac{7}{9} = 194.4 \text{ ml}$$

Amount of water in the mixture = 55.6

Let x ml of milk is added in the mixture then,

Ratio of milk to water.

$$= \frac{194.4 + x}{55.6} = \frac{4}{1}$$

$$(194.4 + x) = 55.6 \times 4$$

$$194.4 + x = 222.4$$

$$x = 28 \text{ ml.}$$

68. (a) Let the Teacher's age is x year.

ATQ,

$$18 \times 26 = 16 \times 25 + x$$

$$468 = 400 + x$$

$$\therefore \text{Teacher's age} = 468 - 400$$

$$= 68 \text{ years.}$$

69. (b) $(A + B)$'s 1 day's work = $\frac{1}{10}$

$$(B + C)\text{'s 1 day's work} = \frac{1}{12}$$

$$(C + A)\text{'s day's work} = \frac{1}{15}$$

On adding,

$$2(A + B + C)\text{'s 1 day's work}$$

$$= \frac{1}{10} + \frac{1}{12} + \frac{1}{15} = \frac{6+5+4}{60} = \frac{1}{4}$$

$$\therefore (A + B + C)\text{'s 1 day's work} = \frac{1}{8}$$

$$A\text{'s 1 day's work} = \frac{1}{8} - \frac{1}{12} = \frac{3-2}{24} = \frac{1}{24}$$

\therefore A alone will complete the work in 24 days.

Hence option [b] is correct answer.

70. (a) Distance = $(44/60) \times 50 = (x/60) \times 55$

$$\therefore x = 40 \text{ minutes}$$

71. (b) The percentage of reduction in consumption:

$$= \frac{100 \times 50}{100 + 50} = (100 \times 50)/150 = 33\frac{1}{3} \%$$

72. (d) Ratio of males and females = 5 : 6

Let the males are 5x and females are 6x

Now,

22 females leave the club

$$5x : (6x - 22) = 6 : 5$$

$$(6x - 22)6 = 5x \times 5$$

$$36x - 132 = 25x$$

$$36x - 25x = 132$$

$$11x = 132$$

$$\Rightarrow x = 12$$

$$\text{The number of males} = 5x = 5 \times 12 = 60$$

73. (c) Let the numbers be 3x and 3y.

$$\therefore 3x + 3y = 36$$

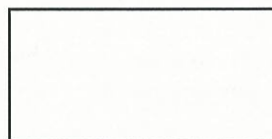
$$\Rightarrow x + y = 12 \quad \dots(i)$$

$$\text{and } 3xy = 105 \quad \dots(ii)$$

Dividing equation (i) by (ii), we have

$$\frac{x}{3xy} + \frac{y}{3xy} = \frac{12}{105}$$

$$\Rightarrow \frac{1}{3y} + \frac{1}{3x} = \frac{4}{35}$$



Shortcut Method:

$$\frac{1}{x} + \frac{1}{y} = \frac{x+y}{xy}$$

74. (a) If they are equal number of rows and columns then,

$$\sqrt{1369} = 37$$

75. (d) According to the question,

$$\frac{n}{2} + \frac{n}{4} + \frac{n}{5} + 7 = n$$

$$\Rightarrow \frac{10n + 5n + 4n}{20} + 7 = n$$

$$\Rightarrow \frac{19n}{20} + 7 = n \Rightarrow n - \frac{19n}{20} = 7$$

$$\Rightarrow \frac{n}{20} = 7 \Rightarrow n = 20 \times 7 = 140$$

76. (a) A lot of reading improves one's vocabulary.

77. (d) I ought to tell you the truth, but I am scared.

78. (b) Mint

79. (b) The thief stood silently in the police station.

80. (b) He was trying hard to put the baggage on the trolley.

81. (a) It was a fertile place.
82. (d) He is quite immune to falling.
83. (a) It is insignificant that you restrict everything that can make you sick.
84. (a) Your strong points are known to me.
85. (a) Harry's schedule was kept busy.
86. (a) A gift was given to her.
87. (d) Protocol means an agreement, a treaty and a settlement.
88. (d) The acidifying of air leads to the loss of nutrients from soils, release of toxic elements into soil and water and acidification of lakes and streams.
89. (c) EEA stands for European Environmental Agency.
90. (c) An ecosystem is a system formed by the interaction of the organisms with their physical environment.
91. (d) Unless you work harder you will fail, means if you do not put more efforts, then you will fail.
92. (b) "You are thinking very highly about Ravi but he is not so" means you have a good opinion about Ravi but he is not as good as you think.
93. (d) Owing to the acute power shortage, the people of our locality have decided to resort to use of electricity only when it is inevitable.
94. (b) "The food in this hotel is no match to what were forced at late hours in Hotel Kohinoor 'Hotel Kohinoor means served us good quality food than what we get here.
95. (d) The idiom 'A man of straw' means a person undertaking a financial commitment without adequate means.
96. (a) The idiom 'To catch a tartar' means to nab a dangerous person.
97. (a) The idiom 'To have an axe to grind' means to have a strong personal opinion.
98. (c) The idiom 'To play second fiddle' means to have a subordinate role to someone or something; be treated as less important than someone or something.
99. (d) Varmillion means brilliant red pigment made from mercury sulphide (cinnabar).
100. (b) Scriptorium means a room set apart for writing, especially one in a monastery where manuscripts were copied.
101. (a) 102. (d) 103. (c) 104. (b) 105. (a)
106. (c) 107. (c) 108. (c) 109. (a) 110. (a)
111. (d) 112. (a) 113. (c) 114. (b) 115. (d)
116. (c) 117. (c) 118. (b) 119. (c) 120. (c)
121. (a) 122. (a) 123. (d) 124. (b) 125. (b)

INTELLIGENCE TEST

1. Which of the following would come in place of the question mark?

P 3 C R 5 F T 8 I V 12 L ?

- (a) Y 17 O (b) X 17 M
(c) X 17 O (d) X 16 O
2. If the positions of the third and tenth letters of the word DOCU-MENTATION are interchanged, and likewise the positions of the fourth and seventh letters, the second and sixth letters is interchanged, which of the following will be eleventh from the right end ?
- (a) C (b) I (c) T (d) U
3. Select the combination of numbers so that letters arranged accordingly will form a meaningful word.

R A C E T
1 2 3 4 5

- (a) 1, 2, 3, 4, 5 (b) 3, 2, 1, 4, 5
(c) 5, 2, 3, 4, 1 (d) 5, 1, 2, 3, 4
4. Arrange the given words in the sequence in which they occur in the dictionary and then choose the correct sequence.
- I. Page II. Pagan III. Palisade IV. Pageant V. Palate
- (a) I, IV, II, III, V (b) II, IV, I, III, V
(c) II, I, IV, V, III (d) I, IV, II, V, III
5. Find which one word cannot be made from the letters of the given word.

CREDENTIAL

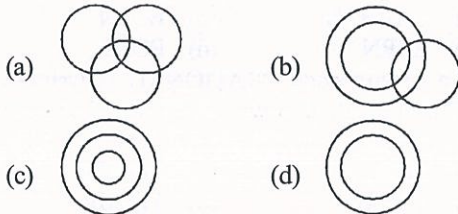
- (a) DENTAL (b) CREATE
(c) TRAIN (d) CREAM

DIRECTIONS (Qs. 6-8): In each of the following questions, four alternatives are given, out of which three are alike in a certain way while one is different.

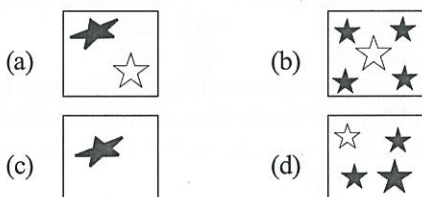
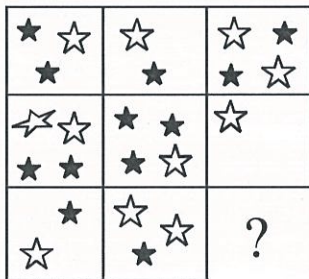
6. (a) Judge (b) Scant
(c) Crowd (d) Flush
7. (a) Rose (b) Lotus
(c) Marigold (d) Lily

8. (a) 9611 (b) 7324
(c) 2690 (d) 1754
9. Choose the correct answer.
TSR : FED :: WVU ?
(a) CAB (b) MLK (c) PQS (d) GFH
10. Neck is related to Tie in the same way as Waist is related to—
(a) Watch (b) Belt
(c) Ribbon (d) Shirt
11. 583 : 293 :: 488 : ?
(a) 291 (b) 378 (c) 487 (d) 581
12. In a certain language, if 1 is coded as A, 2 as B, 3 as C, and so on, how is flower coded in that code?
(a) 6121523518 (b) 6121823515
(c) 6211523518 (d) 6218123515
13. In the following question, select the word which cannot be formed using the letters of the given word.
CARBONATE
(a) CARBON (b) BORN
(c) EARN (d) BOSE
14. In a certain code, 'RATIONAL' is written as 'RTANIOLA'. How would 'TRIBAL' be written in that code ?
(a) TRIALB (b) TIRALB
(c) TIRLBA (d) TIRABL
15. In a certain code language, 'low nas hsi ploy' means 'she is bringing coffee'; 'wis sat, low ploy' means 'he is bringing milk'; and 'sat lim nas' means 'milk and coffee'. Which word in that language means 'he' ?
(a) Sat (b) Wis
(c) Ploy (d) Lew
16. If the cook is called butler, butler is called manager, manager is called teacher, teacher is called clerk and clerk is called principal, who will teach in the class?
(a) Cook (b) Butler
(c) Manager (d) Clerk
17. Anmol finds that he is twelfth from the right in a line of boys and fourth from the left, how many boys should be added to the line such that there are 35 boys in the line?
(a) 19 (b) 13 (c) 14 (d) 20

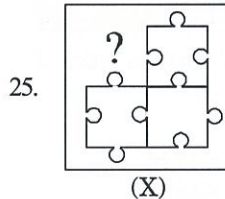
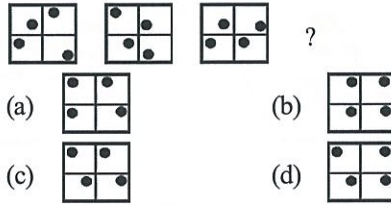
18. If the day before yesterday was Thursday, when will be Sunday?
 (a) Today
 (b) Two days after today
 (c) Tomorrow
 (d) Day after tomorrow
19. E is the son of A. D is the son of B. E is married to C. C is B's daughter. How is D related to E?
 (a) Brother (b) Uncle
 (c) Father-in-law (d) Brother-in-law
20. If '+' means 'divided by', '-' means 'added to', '×' means 'subtracted from' and '÷' means 'multiplied by', then what is the value of $24 \div 12 - 18 + 9$?
 (a) -25 (b) 0.72
 (c) 15.30 (d) 290
21. I am facing south. I turn right and walk 20 m. Then I turn right again and walk 10 m. Then I turn left and walk 10 m and then turning right walk 20 m. Then I turn right again and walk 60 m. In which direction am I from the starting point?
 (a) North (b) North-west
 (c) East (d) North-east
22. Which of the following diagrams correctly represents the relationship among smokers, bidi smokers, cancer patients.



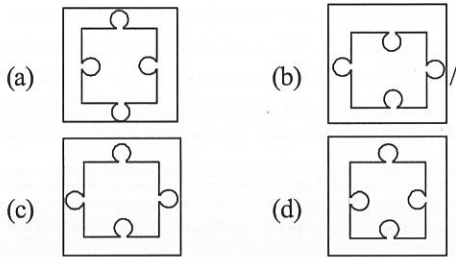
23. Which square should replace the question mark?



24. What comes in the sequence?



25.



(a)

(c)

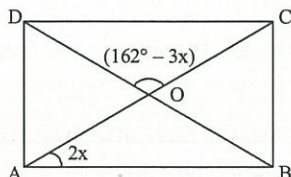
(b)

(d)

MATHEMATICS

26. When N is divided by 4, the remainder is 3. What is the remainder when $2N$ is divided by 4?
 (a) 2 (b) 3 (c) 4 (d) 8
27. The smallest number that must be added to 680621 to make the sum a perfect square is:
 (a) 4 (b) 5 (c) 6 (d) 8
28. The difference between the simple interest received from two different sources on ₹ 1500 for 3 years is ₹ 13.50. The difference between their rates of interests is:
 (a) 0.1% (b) 0.2%
 (c) 0.3% (d) 0.4%
29. The side of a rhombus is 10 cm and one diagonal is 16 cm. The area of the rhombus is:
 (a) 96 cm^2 (b) 95 cm^2
 (c) 94 cm^2 (d) 93 cm^2
30. 220, 200, 100, 80, 40, 20, ?
 (a) 20 (b) 10 (c) 30 (d) 40
31. $(64)^{\frac{-2}{3}} \times \left(\frac{1}{4}\right)^{-3}$ equals
 (a) $\frac{1}{4}$ (b) 1 (c) 4 (d) 16

32. ₹ 2010 are to be divided among A, B and C in such a way that if A gets ₹5, then B must get ₹12 and if B gets ₹4, then C must get ₹5.50. The share of C will exceed that of B by
 (a) ₹ 620 (b) ₹ 430 (c) ₹ 360 (d) ₹ 270
33. ABCD is a rectangle. Find x.



- (a) 54° (b) 36° (c) 24° (d) 18°
34. The volume of a right circular cylinder whose height is 40 cm and the circumference of its base is 66 cm is
 (a) 55440 cm³ (b) 34650 cm³
 (c) 7720 cm³ (d) 13860 cm³
35. What is the sum of two numbers whose difference is 45 and the quotient of the greater number by the lesser number is 4?
 (a) 100 (b) 90 (c) 80 (d) 75
36. A man first sold $\frac{2}{3}$ rd of his total quantity of rice

and 100 kg. Again he sold $\frac{1}{2}$ of the remaining quantity and 100 kg. If the total remaining quantity of the stock is 150 kg. Then, what was the original stock of rice?

- (a) 2100 kg (b) 1800 kg
 (c) 2400 kg (d) 2000 kg
37. What number comes next?
 1, 1, 3, 6, 5, 11, 7, ?
 (a) 16 (b) 18 (c) 20 (d) 22
38. A rectangular field is half as wide as it is long and is completely enclosed by x metre of fencing. What is the area of the field?

- (a) $\frac{x^2}{2}$ m² (b) $2x^2$ m²
 (c) $\frac{2x^2}{9}$ m² (d) $\frac{x^2}{18}$ m²

39. The cross-section of a canal is in the shape of trapezium. The canal is 15 m wide at the top and 9 m wide at the bottom. If the area of the cross-section is 720 m², then the depth of the canal is:
 (a) 58.4m (b) 58.6m
 (c) 58.8m (d) 60m

40. If a clock strikes 12 in 33 seconds, it will strike 6 in how many seconds?

- (a) $\frac{33}{2}$ (b) 15 (c) 12 (d) 22

41. Which of the following numbers is the least?

$(0.5)^2$, $\sqrt{0.49}$, $\sqrt[3]{0.008}$, 0.23

- (a) $(0.5)^2$ (b) $\sqrt{0.49}$
 (c) $\sqrt[3]{0.008}$ (d) 0.23

42. Find the least number which when divided by 12, 24, 36 and 40 leaves a remainder 1, but when divided by 7 leaves no remainder.

- (a) 361 (b) 1080 (c) 721 (d) 371

43. Factorise: $a^4 - 20a^2 + 64$.

- (a) $(a+2)(a-2)(a+4)(a-4)$
 (b) $(a-2)^2(a-4)^2$
 (c) $(a-2)^2(a+4)^2$
 (d) None of these

44. My grandfather was 8 times older to me 16 years ago. He would be 3 times of my age 8 years from now. Eight years ago, what was the ratio of my age to that of my grandfather?

- (a) 1:2 (b) 1:5
 (c) 13:18 (d) 11:53

45. Find a if $a - 3 = \frac{10}{a}$.

- (a) $\sqrt{7}$, 7 (b) 5, -2
 (c) -5, 2 (d) $-\sqrt{7}$, 7

46. If $\sqrt{1296} = 36$, then find the value of

$$\sqrt{12.96} + \sqrt{0.1296} + \sqrt{0.001296} + \sqrt{0.00001296}$$

- (a) 3.9956 (b) 3.9996
 (c) 39.996 (d) 399.96

47. The principal that amounts to ₹4913 in 3 years at

$6\frac{1}{4}\%$ per annum compound interest compounded annually is:

- (a) ₹ 4096 (b) ₹ 4085
 (c) ₹ 4076 (d) ₹ 3096

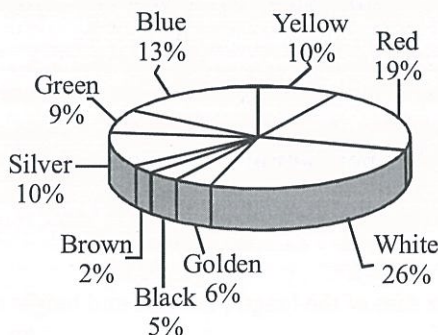
48. The sum of the length, breadth and height of a cuboid is 19 cm and the diagonal is $5\sqrt{5}$. Its surface area is:

- (a) 361 cm² (b) 125 cm²
 (c) 236 cm² (d) 256 cm²

49. The price of an item is decreased by 25%. What percent increase must be done in new price to get the original price?
- (a) $33\frac{1}{3}\%$ (b) $43\frac{3}{4}\%$
- (c) $55\frac{2}{3}\%$ (d) $65\frac{1}{4}\%$
50. A solid cube with an edge 10 cm is melted to form two equal cubes. The ratio of the edge of the smaller cube to the edge of the bigger cube is:
- (a) $\left(\frac{1}{3}\right)^{\frac{1}{3}}$ (b) $\frac{1}{2}$
- (c) $\left(\frac{1}{2}\right)^{\frac{1}{3}}$ (d) $\left(\frac{1}{4}\right)^{\frac{1}{3}}$
51. If $2A = 3B = 4C$, then $A : B : C$ is
- (a) 2 : 3 : 4 (b) 4 : 3 : 2
- (c) 6 : 4 : 3 (d) 3 : 4 : 2
52. In a test, the marks obtained by 15 students are 34, 37, 44, 39, 45, 46, 35, 42, 48, 40, 39, 33, 43, 47, 44. The probability that a pupil chosen at random passed the test, if the passing marks are 40 is
- (a) $\frac{8}{15}$ (b) $\frac{3}{5}$ (c) $\frac{7}{15}$ (d) $\frac{11}{15}$
54. A worker may claim ₹ 1.5 for each km which he travels by taxi and 50 paise for each km he drives his own car. If in one week he claimed ₹ 50 for travelling 80 km, how many kms did he travel by taxi?
- (a) 20km (b) 14km (c) 12km (d) 10km
55. In an examination, a student was asked to find $\frac{3}{14}$ of a certain number. By mistake, he found $\frac{3}{4}$ of it. His answer was 150 more than the correct answer. Find the number.
- (a) 180 (b) 280 (c) 380 (d) 480
56. An amount of ₹ 735 was divided between A, B and C. If each of them had received ₹ 25 less, their shares would have been in the ratio of 1 : 3 : 2. The money received by C was
- (a) ₹ 195 (b) ₹ 200 (c) ₹ 225 (d) ₹ 245
57. A man rows upstream a distance of 9 km or downstream a distance of 18 km taking 3 hours each time. The speed of the boat in still water is
- (a) $7\frac{1}{2}$ km/h (b) $6\frac{1}{2}$ km/h
- (c) $5\frac{1}{2}$ km/h (d) $4\frac{1}{2}$ km/h
58. A can do a piece of work in 10 days. He works at it for 4 days and then B finishes it in 9 days, in how many days can A and B together finish the work?
- (a) 6 days (b) 8 days
- (c) $8\frac{1}{2}$ days (d) $7\frac{1}{2}$ days
59. How long will it take for a sum of money invested at 5 % p.a. at simple interest to increase its value by 40 %?
- (a) 5 years (b) 6 years
- (c) 7 years (d) 8 years
60. The mean of 50 observations was 36. It was found later that an observation 48 was wrongly taken as 23. The corrected new mean is
- (a) 35.2 (b) 34.1 (c) 36.5 (d) 39.1
61. The average score of a cricketer for ten matches is 38.9 runs. If the average for the first six matches is 42, the average for the last four matches is
- (a) 33.25 (b) 33.5 (c) 34.25 (d) 35
62. Two trains travel in opposite directions at 36 km/h and 45 km/h respectively. A man sitting in slower train passes the faster train in 8 seconds.

DIRECTION (Q. 53): Study the chart and give the answer of following questions.

Selling of the car in UK according to the colours



53. If in a certain period the total production of all cars was 95400 then how many more blue cars were sold than green?
- (a) 2580 (b) 3618 (c) 2850 (d) 3816

- The length of the faster train is
 (a) 80m (b) 120m
 (c) 160m (d) 180m
63. By selling a chair for ₹ 368, a man lost 8 %. For how much should he have sold it to gain 15 %?
 (a) ₹ 450 (b) ₹ 475 (c) ₹ 460 (d) ₹ 500
64. A train 110 metres long is running with a speed of 60 km/h. In what time will it pass a man who is running at 6 km/h in the direction opposite to that of train?
 (a) 5 sec (b) 6 sec
 (c) 7 sec (d) 10 sec
65. If 3 men or 4 women can plough a field in 43 days, in how many days 7 men and 5 women can plough the same field?
 (a) 18 days (b) 10 days
 (c) 12 days (d) 15 days
66. A man sold two watches for ₹ 3750 each; on one he gained 5 % and on the other he lost 5 %. What was his total gain or loss as a percentage?
 (a) 0.25 % loss (b) 2.5 % loss
 (c) 25 % gain (d) 12.5 % gain
67. Anmol sold two items for ₹ 1000 each. On one, he gained 10% and on other, he lost 10%. How much did he gain or lose in the whole transaction?
 (a) profit, 0.95% (b) loss, 1%
 (c) profit, 10% (d) loss, 10%
68. The price of an item is decreased by 25%. What percent increase must be done in new price to get the original price?
 (a) $33\frac{1}{3}\%$ (b) $43\frac{3}{4}\%$
 (c) $55\frac{2}{3}\%$ (d) $65\frac{1}{4}\%$
69. A's salary is 50% more than B's. How much percent is B's salary less than A's?
 (a) $63\frac{1}{4}\%$ (b) $43\frac{1}{4}\%$
 (c) $53\frac{1}{3}\%$ (d) $33\frac{1}{3}\%$
70. A sum was invested for 3 years at simple interest at a certain rate. Had it been invested at 4% higher rate of interest, it would have fetched ₹ 600 more. The sum is
 (a) ₹ 4000 (b) ₹ 4950
 (c) ₹ 5000 (d) ₹ 5150
71. Present age of X and Y are in the ratio 7:5 respectively. Four years hence, the ratio of their ages will become 11:9 respectively. What is the present age of Y?
 (a) 1 year (b) 7 year
 (c) 5 year (d) None of these
72. A train 150 m long is running with a speed of 68 km/h. In what time will it pass a man who is running at 8 km/h in the same direction in which the train is going?
 (a) 8 sec (b) 8.5 sec
 (c) 9 sec (d) 9.5 sec
73. A train covers a distance of 12 km in 10 min. If it takes 6 sec to pass a telegraph post, the length of the train is
 (a) 90m (b) 100m (c) 120m (d) 140m
74. A's salary is 50% more than B's. How much percent is B's salary less than A's?
 (a) $63\frac{1}{4}\%$ (b) $43\frac{1}{4}\%$
 (c) $53\frac{1}{3}\%$ (d) $33\frac{1}{3}\%$
75. A man lent a sum of money at the rate of simple interest of 4%. If the interest for 8 years is ₹ 340 less than the principal, the principal is
 (a) ₹ 500 (b) ₹ 520 (c) ₹ 540 (d) ₹ 580

LANGUAGE TEST

DIRECTIONS (Qs. 76 - 80): Choose the best option to complete the sentences given below.

76. _____ for more than 8 hours is not good for health.
 (a) Sleeping (b) Wandering
 (c) Eating (d) Walking
77. You _____ not yell at me like that ever again.
 (a) may (b) must
 (c) could (d) would
78. We didn't arrange to meet. It was _____ coincidence that I saw him.
 (a) clear (b) pure
 (c) great (d) very
79. The mischievous kids _____ threw the wrappers out of the window.
 (a) trustingly (b) deliberately
 (c) thoughtfully (d) sincerely

31. (c) $(64)^{\frac{-2}{3}} \times \left(\frac{1}{4}\right)^{-3}$

$$= (4^3)^{\frac{-2}{3}} \times (4^{-1}a)^{-3}$$

$$= 4^{-2} \times 4^3 = 4^{-2+3} = 4^1 = 4$$

32. (d) A : B = 5 : 12

B : C = 4 : 5.5 = 12 : 16.5

\Rightarrow A : B : C = 5 : 12 : 16.5

\therefore The share of C will exceed that of B by

$$\frac{(16.5 - 12)}{5 + 12 + 16.5} \times ₹2010 = \frac{4.5 \times 2010}{33.5} = ₹270$$

33. (d) Diagonals of a rectangle are equal and bisect each other.

\therefore In $\triangle AOB$, $\angle AOB = 162^\circ - 3x$

(vert. opp. \angle s)

$\angle OBA = \angle OAB = 2x$ ($\because OA = OB$)

$\therefore \angle AOB + \angle OBA + \angle OAB = 180^\circ$

$\Rightarrow 162^\circ - 3x + 2x + 2x = 180^\circ \Rightarrow x = 18^\circ$

34. (d) Given, $2\pi r = 66$

$$\Rightarrow r = \frac{66 \times 7}{2 \times 22} = \frac{21}{2} \text{ cm}$$

$$\therefore V = \pi r^2 h = \frac{22}{7} \times \frac{21}{2} \times \frac{21}{2} \times 40 = 13860 \text{ cm}^3$$

35. (d) Let the lesser number be x. Then,
Greater number = x + 45

Given, $\frac{x + 45}{x} = 4$

$\Rightarrow x + 45 = 4x$

$\Rightarrow 3x = 45 \Rightarrow x = 15$

Then, required sum = x + x + 45 = 30 + 45 = 75

36. (b)

37. (a) There are two alternate sequences that increase by 2 and 5, respectively, i.e., 1, 3, 5, 7 and 1, 6, 11, 16.

38. (d) Let the breadth of the rectangular field be a m.
Then, its length = 2a m
Given, $2(2a + a) = x$

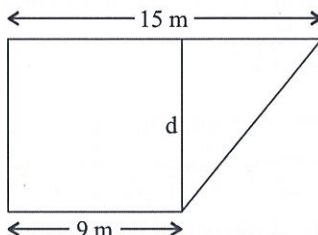
$$\Rightarrow 6a = x \Rightarrow a = \frac{x}{6} \text{ m}$$

$$\therefore \text{Length} = 2a = 2 \times \frac{x}{6} = \frac{x}{3} \text{ m}$$

\therefore Area of the rectangular field

$$= \frac{x}{3} \times \frac{x}{6} = \frac{x^2}{18} \text{ m}^2$$

39. (d) Area of cross-section = 720 m²



$$\Rightarrow \frac{1}{2} \times (9 + 15) \times d = 720$$

$$\Rightarrow d = \frac{720 \times 2}{24} \text{ m} = 60 \text{ m}$$

40. (b) In order to strike 12, there are 11 intervals

of equal time = $\frac{33}{11} = 3$ seconds each

Therefore, to strike 6 it has 5 equal intervals, it requires $5 \times 3 = 15$ sec.

41. (c) $(0.5)^2 = 0.25$;

$$\sqrt{0.49} = 0.7$$

$$\sqrt[3]{0.008} = 0.2; 0.23$$

Arranging in ascending order the numbers are:
0.2, 0.23, 0.25, 0.7

$\therefore \sqrt[3]{0.008} = 0.2$ is the least.

42. (c) L.C.M. of 12, 24, 36 and 40 = 360

Any number which when divided by 12, 24, 36 and 40 leaving a remainder 1 is of the form $360k + 1$. Now, we have to find the least value of k for which $360k + 1$ is divisible by 7.

$$\begin{array}{r} 51k \\ 7 \overline{) 360k + 1} \\ \underline{-357k} \\ 3k + 1 \end{array}$$

By inspection, we find that for k = 2,

$$3 \times 2 + 1 = 7$$

\therefore Required number = $360 \times 2 + 1 = 721$.

$$\begin{aligned}
 43. \quad (a) \quad & a^4 - 20a^2 + 64 = a^4 - 16a^2 - 4a^2 + 64 \\
 & = a^2(a^2 - 16) - 4(a^2 - 16) \\
 & = (a^2 - 16)(a^2 - 4) \\
 & = (a + 4)(a - 4)(a + 2)(a - 2)
 \end{aligned}$$

$$\begin{aligned}
 44. \quad (d) \quad & \text{Let my age 16 years ago be } x \text{ years} \\
 & \text{Then, my grandfather's age 16 years ago} \\
 & = 8x \text{ years} \\
 & \text{At present,} \\
 & \text{My age} = (x + 16) \text{ years} \\
 & \text{Grandfather's age} = (8x + 16) \text{ years} \\
 & \text{8 years from now,} \\
 & \text{My age} = (x + 16 + 8) \text{ years} = (x + 24) \text{ years} \\
 & \text{Grandfather's age} \\
 & = (8x + 16 + 8) \text{ years} \\
 & = (8x + 24) \text{ years} \\
 & \text{Given, } 8x + 24 = 3(x + 24) \\
 & \Rightarrow 8x + 24 = 3x + 72 \\
 & \Rightarrow 5x = 48
 \end{aligned}$$

$$\Rightarrow x = \frac{48}{5} = 9.6 \text{ years}$$

$$\begin{aligned}
 \therefore \quad & \text{My age 16 years ago} = 9.6 \text{ years} \\
 & \text{Grandfather's age 16 years ago} = 8 \times 9.6 \text{ years} \\
 & = 76.8 \text{ years}
 \end{aligned}$$

$$\text{Required ratio} = \frac{9.6 + 8}{76.8 + 8} = \frac{17.6}{84.8} = \frac{11}{53} = 11 : 53.$$

$$45. \quad (b) \quad a - 3 = \frac{10}{a} \Rightarrow a^2 - 3a = 10$$

$$\begin{aligned}
 & \Rightarrow a^2 - 3a - 10 = 0 \\
 & \Rightarrow a^2 - 5a + 2a - 10 = 0 \\
 & \Rightarrow a(a - 5) + 2(a - 5) = 0 \\
 & \Rightarrow (a - 5)(a + 2) = 0 \\
 & \Rightarrow a - 5 = 0 \text{ or } a + 2 = 0 \\
 & \Rightarrow a = 5, -2.
 \end{aligned}$$

$$46. \quad (b) \quad \sqrt{12.96} + \sqrt{0.1296} + \sqrt{0.001296} + \sqrt{0.00001296}$$

$$= \sqrt{\frac{1296}{100}} + \sqrt{\frac{1296}{10000}} + \sqrt{\frac{1296}{1000000}} + \sqrt{\frac{1296}{100000000}}$$

$$= \frac{36}{10} + \frac{36}{100} + \frac{36}{1000} + \frac{36}{10000}$$

$$= 3.6 + 0.36 + 0.036 + 0.0036 = 3.9996$$

$$47. \quad (a) \quad A = ₹4913, n = 3,$$

$$r = 6\frac{1}{4}\% = \frac{25}{4}\%, P = ?$$

$$\therefore 4913 = P \left(1 + \frac{25}{400}\right)^3$$

$$\Rightarrow 4913 = P \left(1 + \frac{1}{16}\right)^3$$

$$\Rightarrow 4913 = P \left(\frac{17}{16}\right)^3$$

$$\Rightarrow 4913 = P \times \frac{4913}{4096}$$

$$\Rightarrow P = ₹4096.$$

$$48. \quad (c) \quad \text{Let } l, b, h \text{ be the length, breadth and height of the cuboid.}$$

$$\therefore l + b + h = 19 \text{ and}$$

$$\sqrt{l^2 + b^2 + h^2} = 5\sqrt{5}$$

$$\Rightarrow l^2 + b^2 + h^2 = (5\sqrt{5})^2 = 125$$

$$\text{Surface area of the cuboid} = 2(lb + bh + lh)$$

$$= (l + b + h)^2 - (l^2 + b^2 + h^2)$$

$$= 19^2 - 125 = 361 - 125 = 236 \text{ cm}^2.$$

$$49. \quad (a) \quad \text{Let the price of item be ₹100.}$$

$$\text{price after 25\% decrement} = 75 ₹$$

$$\text{Now \% change to achieve 100 ₹ again}$$

$$= \frac{(100 - 75)}{75} \times 100 = \frac{25}{75} \times 100 = 33\frac{1}{3}\%$$

$$50. \quad (c) \quad \text{Volume of the bigger cube} = (10)^3 \text{ cm}^3 = 1000 \text{ cm}^3$$

$$\text{Volume of the smaller cube} = 500 \text{ cm}^3$$

$$\text{Required ratio}$$

$$= \frac{\text{Edge of smaller cube}}{\text{Edge of bigger cube}}$$

$$= \frac{(500)^{\frac{1}{3}}}{(1000)^{\frac{1}{3}}} = \left(\frac{500}{1000}\right)^{\frac{1}{3}} = \left(\frac{1}{2}\right)^{\frac{1}{3}}.$$

$$51. \quad (c) \quad \frac{A}{6} = \frac{B}{4} = \frac{C}{3}$$

$$A : B : C = 6 : 4 : 3$$

$$52. \quad (b) \quad \text{Number of students getting marks equal to or more than 40} = 9(44, 45, 46, 42, 48, 40, 43, 47, 44)$$

$$\therefore P(\text{pass}) = \frac{\text{Number of students who passed}}{\text{Total number of students}}$$

$$= \frac{9}{15} = \frac{3}{5}.$$

53. (d) Required numbers = $(13 - 9)\%$ of 95400 = 4% of 95400 = 3816

54. (d) Let Distance travelled by taxi x km and by our car be y km

ATQ

$$x + y = 80 \quad \dots(i)$$

$$1.5x + .5y = 50 \quad \dots(ii)$$

Multiplying Eq(i) by .5 and subtracting Eq (ii) from (i)

$$x = 10$$

Distance travelled by taxi is 10 Km

55. (b) Let the number be x

ATQ

$$\frac{3x}{4} - \frac{3x}{14} = 150$$

$$\frac{3x}{2} \left[\frac{1}{2} - \frac{1}{7} \right] = 150$$

$$x \left[\frac{7-2}{14} \right] = 100; \quad x \left[\frac{5}{14} \right] = 100$$

$$x = 280$$

56. (d) Let A got = $x + 25$

$$B \text{ got} = 3x + 25$$

$$C \text{ got} = 2x + 25$$

ATQ

$$x + 25 + 3x + 25 + 2x + 25 = 735$$

$$6x = 735 - 75$$

$$6x = 660$$

$$x = 110$$

$$\text{Money received by C} = 2x + 25$$

$$= 2 \times 110 + 25 = ₹ 245$$

57. (d) Speed of boat upstream = $\frac{9}{3} = 3 \text{ km/hr}$

$$\text{Speed of boat down stream} = \frac{18}{3} = 6 \text{ km/hr}$$

Let speed of boat be = x km/hr

Let speed of stream be = y km/hr

ATQ

$$x + y = 6$$

$$x - y = 3$$

By subtracting

$$2x = 9$$

$$x = \frac{9}{2} \text{ or } 4\frac{1}{2} \text{ km/hr}$$

58. (a) A can do a work in 10 day

$$A \text{ can do work in 1 day} = \frac{1}{10} \text{ part of work}$$

$$\text{Let B can do in x days in 1 day he can do} = \frac{1}{x}$$

part of work

A working for 4 day and B for 9 days work is completed

$$\text{i.e. } \frac{4}{10} + \frac{9}{x} = 1$$

$$\frac{9}{x} = \frac{6}{10}$$

$$x = 15 \text{ days}$$

$$\text{Then Both A and B can do in 1 day} = \frac{1}{10} + \frac{1}{15} \text{ part}$$

$$\text{of work} = \frac{1}{6}$$

Or they both will complete work in 6 days

59. (d) Let the sum be x. then SI = 40% of $x = \frac{2x}{5}$

Rate = 5%.

$$\text{Time} = \left[\frac{100 \times 2x}{5} \times \frac{1}{5x} \right] \left[T = \frac{100 \times \text{SI}}{P \times R} \right]$$

$$= 8 \text{ years}$$

60. (c) Correct sum = $(36 \times 50 + 48 - 23) = 1825$.

$$\text{Correct mean} = \frac{1825}{50} = 36.5$$

61. (c) Average score of 10 matches = 38.9

$$\text{Total score} = 38.9 \times 10 = 389$$

$$\text{Average score of 6 matches} = 42$$

$$\text{Total score} = 42 \times 6 = 252$$

$$\text{Total score for remaining 4 matches} = 389 - 252 = 137$$

$$\text{Average for 4 matches} = \frac{137}{4} = 34.25$$

62. (d) Relative speed of both trains = $(36 + 45) \text{ km/hr}$

$$= \left(81 \times \frac{5}{18} \right) \text{ m/sec} = \frac{45}{2} \text{ m/sec}$$

Distance travelled by train while passing man = length of train.

$$\text{Length of train} = \frac{45}{2} \times 8 = 180 \text{ m}$$

$$\therefore (D = ST)$$

63. (c) SP of chair = ₹ 368,

Let CP = ₹ x

Loss% = 8%

$$\left[\frac{100 - 8}{100} \right] x = 368$$

$$x = \frac{368}{92} \times 100 = 400$$

When, profit = 15%

$$\therefore \text{SP} = \frac{115}{100} \times 400 = ₹ 460$$

64. (b) Relative speed of train for man = speed of train + speed of man = (60 + 6) km/hr

$$= \left(66 \times \frac{5}{18} \right) \text{ m/sec}$$

$$= \frac{55}{3} \text{ m/sec}$$

Distance travelled by train while crossing man = length of train.

Length of train = 110 metres

$$\text{Time taken} = \frac{D}{S}$$

$$= \frac{110}{55} \times 3 = 6 \text{ sec}$$

65. (c) 3 men can Plough Field in 43 days, 1 man will plough in
- 43×3

4 women can plough in 43 days 1 women will plough in 4×43 days.

Work done by 1 men and 1 women in 1 day

$$= \frac{1}{43 \times 3} + \frac{1}{43 \times 4}$$

Work done by 7 men and 5 women in 1 day

$$= \frac{7}{43 \times 3} + \frac{5}{43 \times 4}$$

$$= \frac{1}{43} \left[\frac{28 + 15}{12} \right] = \frac{43}{43 \times 12} = \frac{1}{12}$$

They will do work in 12 days.

66. (a) CP of first watch =
- $\frac{3750}{105} \times 100$

$$\text{CP of second watch} = \frac{3750}{95} \times 100$$

$$\text{Total CP} = \frac{3750 \times 100}{5} \left(\frac{1}{21} + \frac{1}{19} \right)$$

$$= \frac{375000}{5} \left(\frac{40}{21 \times 19} \right)$$

$$= \frac{3000000}{21 \times 19} = 7518.80$$

Total SP = 3750 + 3750 = 7500

Loss = 18.80

$$\text{Loss\%} = \frac{18.80}{7500} \times 100 \approx .25\% \text{ loss}$$

67. (b) Net loss% = $\frac{(10)^2}{100} = \frac{100}{100} = 1$

68. (a) Since price of an item is decreased by
- $\frac{1}{4}$
- times. So it must be increased by
- $\frac{1}{3}$
- times to get

the original price. $\frac{1}{3} = 33\frac{1}{3}\%$

69. (d) A' salary is
- $\frac{1}{2}$
- times more than B's salary. So

B' salary would be $\frac{1}{1+2}$ times, less than A.

$$\text{i.e., } \frac{1}{3} = 33\frac{1}{3}\%$$

70. (c) for 3 years

 \Rightarrow ₹600 more

for 1 years

 \Rightarrow ₹200 more

Now 4% of principal = 200

$$\text{Principal} = \frac{200 \times 100}{4}$$

Principal = ₹5000

71. (c) Let present age of X and Y are 7x and 5x respectively

$$\text{Now, } \frac{7x + 4}{5x + 4} = \frac{11}{9}$$

$$63x + 36 = 55x + 44$$

$$8x = 8$$

$$x = 1$$

So, present age of y = $5 \times 1 = 5$ year.

72. (c) Net relative speed = $(68 - 8) \text{ km/h} = 60 \text{ km/h}$
 $= 60 \times \frac{5}{18} \text{ m/s} = \frac{50}{3} \text{ m/s}$
 Time = $\frac{150}{\frac{50}{3}} = 9 \text{ sec.}$
73. (c) Let length of the train is x .
 Distance = $12 \text{ km} = 12000 \text{ m}$
 Time = $10 \text{ min} = 10 \times 60 = 600 \text{ sec}$
 Speed of train = $\frac{12000}{600} = 20 \text{ m/sec}$
 when train passes a telegraph post it covers distance equal to its length.
 using distance = time \times speed
 $x = 6 \times 20 = 120 \text{ m}$
74. (d) Let salary of B is 100 ₹
 So salary of A is 150 ₹
 The percentage B's salary is less than to A's

$$\text{salary} = \frac{150 - 100}{150} \times 100 = \frac{50}{150} \times 100$$

$$= 33\frac{1}{3} \%$$
75. (a) Let the principle amount be 'P'

$$\text{S.I.} = \frac{\text{P.r.t}}{100}$$
 According to question –

$$\text{P} - 340 = \frac{\text{P} \times 4 \times 8}{100 \times 25}$$

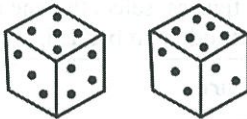
$$25\text{P} - 8\text{P} = 8500$$

$$17\text{P} = 8500$$

$$\text{P} = 500 \text{ ₹}$$
76. (a) Sleeping for more than 8 hours is not good for health.
77. (b) You must not yell at me like that ever again.
78. (b) pure
79. (b) The mischievous kids deliberately threw the wrappers out of the window .
80. (c) It is quite hot today; the temperature seems to be above forty five degrees.
81. (a) The soldiers were condemned going for war every now and then.
82. (d) The king could not judge that there was disappointment among the people.
83. (a) It is a transmittable disease.
84. (b) You are requested to remain standing and not to start running.
85. (a) An interesting novel was given by his sister to him to read.
86. (d) A pair of binoculars was bought by my father for me.
87. (a) Maths is taught by Mr Rahim to us.
88. (a) Is the newspaper read by them every day?
89. (b) The last time that the dollar's cost was '66 was in the year 2013.
90. (a) The word that has the same meaning as working together at the same time is sync. Sync means working together at the same time, speed and same way.
91. (b) Rupee is among the top five currencies of the world.
92. (c) The fall of rupee is less than four per cent.
93. (a) A word from the above passage that is the opposite of dying is emerging. Emerging means to rise.
94. (c) Because we need to change the machine.
95. (a) The market was closed today. I will buy one tomorrow.
96. (b) Mother: I have made your favourite dish.
97. (d) The driver: It met with a small accident.
98. (b) Gauri: I like to watch football; I don't miss any match.
99. (a) The meaning of ambiguity is the quality of being open to more than one interpretation; inexactness. Hence, option (a) is the correct choice.
100. (a) The meaning of affluence is the state of having a great deal of money; wealth. Hence, the option (a) is the correct choice.
101. (a) 102. (a) 103. (b) 104. (c)
 105. (b) 106. (a) 107. (c) 108. (a)
 109. (b) 110. (d) 111. (d) 112. (b)
 113. (b) 114. (c) 115. (b) 116. (a)
 117. (a) 118. (b) 119. (b) 120. (b)
 121. (d) 122. (d) 123. (d) 124. (c)
 125. (b)

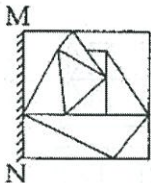
INTELLIGENCE TEST

1. Two positions of a dice are shown below. If 1 is at the bottom, which number will be on top?

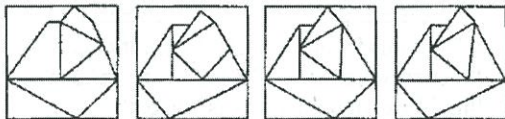


- (a) 4 (b) 3 (c) 8 (d) 5
2. If a mirror is placed on the line MN, then which of the answer figures is the right image of the given figure.

Question Figure :



Answer figures:

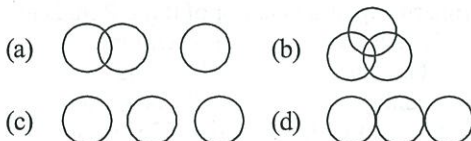


- (a) (b) (c) (d)
3. From the given alternatives select the word which can be formed using the letters of the given word.

DICTIONARY

- (a) BINARY (b) DAIRY
(c) NATION (d) ADDITION

4. Which figure best represents the relationship between Editor, Newspaper and Journalist?



5. Shiela and Belah start from their office and walk in opposite direction each travelling 10kms. Shiela then turns left and walks 10 kms. Belah turns right and walks 10 km. How far are they now from each other?
- (a) 20km (b) 10km (c) 5km (d) 8km

6. Name a single letter, which can be prefixed to the following words in order to obtain entirely new words?

TILL TABLE PILE TAB PRING

- (a) S (b) B (c) H (d) C

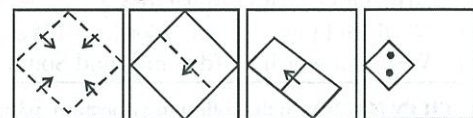
7. Arrange the following words as per order in the dictionary.

- | | |
|-----------------|-----------------|
| 1. Command | 2. Commit |
| 3. Connect | 4. Conceive |
| 5. Conduct | 6. Commerce |
| (a) 6 2 1 5 4 3 | (b) 6 1 2 4 5 3 |
| (c) 1 6 2 4 5 3 | (d) 1 2 6 5 3 4 |

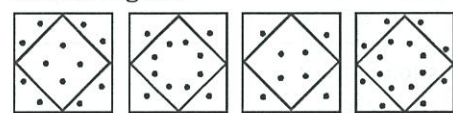
DIRECTIONS (Qs. 8-10): In each of the following questions, select the related word/ letter/ number from the given alternatives.

8. Body: Stomach :: Library: ?
(a) Cash (b) Book
(c) Headmaster (d) School
9. HAND : JBPE :: PALM: ?
(a) RBNM (b) RBMN
(c) QBNN (d) RBNN
10. 76: 42:: 66: ?
(a) 36 (b) 63 (c) 12 (d) 35
11. A piece of paper is folded and punched as shown below in the question figures. From the given answer figures, indicate how it will appear when opened.

Question figures :

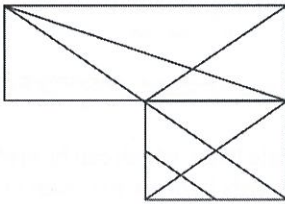


Answer Figures



- (a) (b) (c) (d)
12. If Blue means Pink, Pink means Green, Green means Yellow, Yellow means Red and Red means White, then what is the colour of turmeric?
- (a) Pink (b) Yellow
(c) Red (d) Green

13. How many triangles can be found out from the following figure?



- (a) 17 (b) 21 (c) 24 (d) 25

DIRECTIONS (Qs. 14-16) : Select the one which is different from the other three responses.

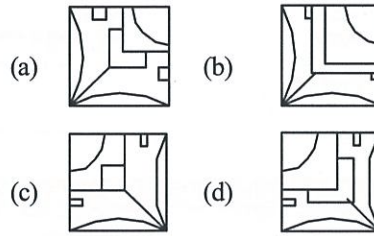
14. (a) Steering wheel (b) Engine
(c) Car (d) Tyre
15. (a) 325 (b) 360
(c) 230 (d) 256
16. (a) NLM (b) YXZ
(c) NMO (d) RQS
17. Arrange the following words in their descending order.
1. Weekly 2. Bi-annual
3. Fortnightly 4. Monthly
5. Annual
(a) 1, 3, 4, 2, 5 (b) 2, 5, 4, 1, 3
(c) 4, 1, 2, 3, 5 (d) 5, 2, 4, 3, 1
18. Which one of the following is water image of "COMMISSION"?
- (a) NOISSIWWOJ (b) COMMI 22ION
(c) COMMI22ION (d) NOISSIWWOJ
19. Rani and Sarita started from a place X. Rani went West and Sarita went North, both travelling with the same speed. After sometime, both turned their left and walked a few steps. If they again turned to their left, in which directions the faces of Rani and Sarita will be with respect to X ?
(a) North and East (b) North and West
(c) West and North (d) East and South

DIRECTION (Q. 20): In the following question, which answer figure will complete the pattern in the question figure?

Question Figure:



Answer Figures:

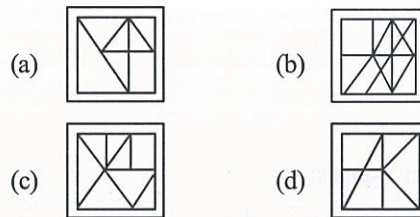


DIRECTION (Q. 21): In the following question, from the given answer figures, select the one in which the question figure is hidden/embedded.

Question Figure



Answer Figures:



22. If '-' stands for addition, '+' for multiplication, '÷' for subtraction and '×' for division, which one of the following equations is correct?
(a) $5 + 2 - 12 \times 6 \div 2 = 10$
(b) $5 \div 2 + 12 \times 6 - 2 = 4$
(c) $5 - 2 + 12 \times 6 \div 2 = 27$
(d) $5 + 2 - 12 \div 6 \times 2 = 13$
23. In a class of 45, Neha's rank is 15th from first, what is her rank from the last ?
(a) 30 (b) 32 (c) 33 (d) 31
24. Kathir is senior of Ganesh. Ganesh is senior of Appar. Appar is junior of Raju. Raju is junior of Ganesh. Who is the most senior?
(a) Ganesh (b) Raju
(c) Kathir (d) Appar
25. In a certain code language '526' means 'sky is blue'; '24' means 'blue colour' and '436' means 'colour is fun'. Which of the following digit stands for 'fun' ?
(a) 5 (b) 4 (c) 3 (d) 2

MATHEMATICS

26. The simplest answer for $\sqrt{9a^4 b^8}$ is:

- (a) $9a^2 b^4$ (b) $3a^2 b^4$
(c) $81a^8 b^{16}$ (d) $3ab^2$

27. In the matrix given below, the value of A, B and C are

9	A	12
B	10	7
8	C	11

- (a) $A=13, B=11, C=9$
(b) $A=13, B=9, C=11$
(c) $A=9, B=11, C=13$
(d) $A=9, B=13, C=11$

28. If 1156 students in a school are to form a square pattern on the field for the mass drill function on the Sports Day, how many students will form each side of the square?

- (a) 31 (b) 24 (c) 29 (d) 34

29. Divide $(38a^3 b^3 c^2 - 19a^4 b^2 c)$ by $19a^2 bc$.

- (a) $2ab^2 c - a^2 b$ (b) $2ab^2 - 3ac^2$
(c) $ab^2 c - a^2 b$ (d) $2ab^2 c + a^2 b$

30. Factorise $10xy - 5y + 8 - 16x$.

- (a) $(2x-1)(5y-6)$ (b) $(2x-1)(5y-8)$
(c) $(x-1)(y-30)$ (d) $(5x-1)(2y-6)$

31. If $4\sqrt{x}\sqrt{x} = 256$ then the value of x is

- (a) 2 (b) 16 (c) 4 (d) $\sqrt{2}$

32. The digit in the units' place in the cube root of 21952 is:

- (a) 8 (b) 6 (c) 4 (d) 2

33. The common root of the equations $x^2 - 7x + 10 = 0$ and $x^2 - 10x + 16 = 0$ is:

- (a) -2 (b) 3 (c) 5 (d) 2

34. ₹1000 invested at 5% p.a. simple interest. If the interest is added to the principal after every 10 years, the amount will become ₹2000 after

- (a) 15 years (b) $16\frac{2}{3}$ years
(c) 18 years (d) 20 years

35. How much should a sum of ₹16000 approximately amount to in 2 years at 10% p.a. compounded half yearly?

- (a) ₹17423 (b) ₹18973
(c) ₹19448 (d) ₹19880

36. Of a certain sum, $\frac{1}{3}$ rd is invested at 3%, $\frac{1}{6}$ th at 6% and the rest at 8%. If the SI for 2 years from all these investments amounts to ₹600. Then the original sum was

- (a) ₹2000 (b) ₹3000
(c) ₹4000 (d) ₹5000

37. The perimeter of a rhombus is 40 cm. If the length of one of its diagonals be 12 cm, then the length of the other diagonal is:

- (a) 14 cm (b) 15 cm (c) 16 cm (d) 12 cm

38. In how many years will ₹4000 amount to ₹5324 at 10% p.a. compounded annually?

- (a) $2\frac{3}{4}$ years (b) 3 years

- (c) $3\frac{1}{2}$ years (d) 5 years

39. Sindhu is 40 years old and Smita is 20 years old. How many years ago was Sindhu three times as old as Smita?

- (a) 9 (b) 6 (c) 10 (d) 8

40. Sanjay sold his old dining table set at a loss of 20%. If he had sold it for ₹800 more, he would have received a profit of 5%. The cost price is:

- (a) ₹1730 (b) ₹2150
(c) ₹2600 (d) ₹3200

41. Ahmed repaid an amount of ₹9125 to the bank which includes an interest of ₹625. What was the money that he borrowed from the bank?

- (a) ₹7860 (b) ₹8400
(c) ₹8500 (d) ₹9250

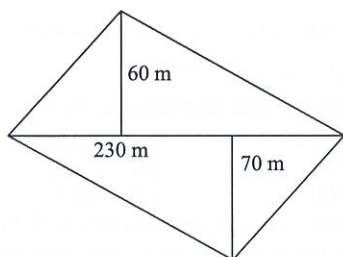
42. ₹53 are divided among A, B and C such that A gets ₹7 more than B and B gets ₹8 more than C. What is the ratio of their shares?

- (a) 16:9:18 (b) 25:18:10
(c) 18:25:10 (d) 15:8:30

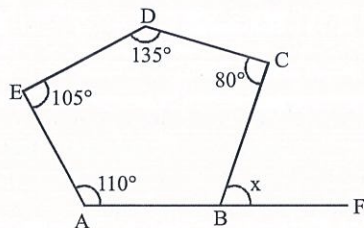
43. In a medical certificate, by mistake a candidate gave his height as 25% more than the actual. In the interview panel, he clarified his height was 5 feet 5 inches. Find the percentage correction made by the candidate from his stated height to his actual height.

- (a) 28.56 (b) 20 (c) 25 (d) 24

44. A plot of land is in the form of a quadrilateral, where one of its diagonals is 230 m long. The two vertices on either side of this diagonal are 60 m and 70 m away. What is the area of the plot of land?

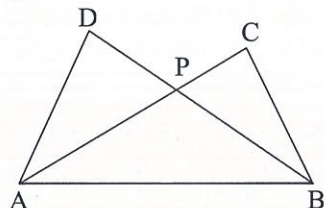


- (a) 21426 sq. m. (b) 14950 sq. m.
(c) 12616 sq. m. (d) 10928 sq. m.
45. A godown has dimension $7\text{ m} \times 4.5\text{ m} \times 2\text{ m}$. How many cartons of dimension $70\text{ cm} \times 22.5\text{ cm} \times 40\text{ cm}$ can be stored in it?
(a) 1120 (b) 1108 (c) 1040 (d) 1000
46. The total surface area of a box of length 8 cm and breadth 6 cm is 208 sq. cm. Find the height of the box.
(a) 4.0 cm (b) 3.6 cm (c) 5.2 cm (d) 4.8 cm
47. The area of an equilateral triangle is $36\sqrt{3}$ sq. m. Find the length of its sides.
(a) 17.2 m (b) 16 m (c) 14 m (d) 12 m
48. If A's salary is 50% more than B's, then by what % B's salary is less than A's salary?
(a) $33\frac{1}{3}$ (b) $23\frac{1}{3}$ (c) 33 (d) 30
49. In a two digit number, ten's digit is twice the unit's digit. The number formed by interchanging the digits is 36 less than the original number. Find the number.
(a) 48 (b) 70 (c) 72 (d) 84
50. In the adjoining figure, find the value of x .
(a) 32° (b) 46° (c) 27° (d) 70°

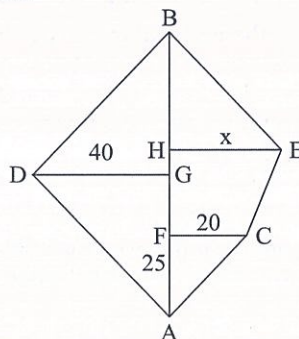


51. A water tap fills a tank in p hours and the tap of the bottom of the tank empties it in q hours. If p is less than q and when both the taps are open, the tank is filled in r hours. Then
(a) $\frac{1}{r} = \frac{1}{p} + \frac{1}{q}$ (b) $\frac{1}{r} = \frac{1}{p} - \frac{1}{q}$
(c) $r = p + q$ (d) $r = p - q$

52. One pendulum ticks 57 times in 58 sec, while another ticks 608 times in 609 sec. If they started together, then how often will they tick together in the first hour?
(a) 47 (b) 53 (c) 57 (d) 67
53. If an article is sold for ₹178 at a loss of 11%, what should be its selling price in order to earn a profit of 11%?
(a) ₹222.50 (b) ₹267
(c) ₹222 (d) ₹220
54. In how many years will a sum of ₹800 at 10% per annum compound interest, compounded semi-annually become ₹926.10?
(a) 1 year (b) 3 years
(c) 2 years (d) $1\frac{1}{2}$ years
55. In the given figure, $AD = BC$, $AC = BD$. Then $\triangle PAB$ is:



- (a) equilateral (b) right angled
(c) scalene (d) isosceles
56. The area of the given field is 3500 m^2 . $AF = 25\text{ m}$, $AG = 50\text{ m}$, $AH = 75\text{ m}$ and $AB = 100\text{ m}$. The rest of the dimensions are shown in the figure. Find the value of x .

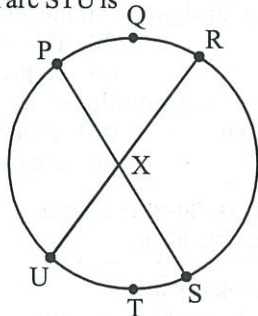


- (a) 17 m (b) 20 m (c) 22 m (d) 25 m
57. A water tank is 30 m long, 20 m wide and 12 m deep. It is made up of iron sheet which is 3 m wide. The tank is open at the top. If the cost of the iron sheet is ₹ 10 per metre, then the total cost of the iron sheet required to build the tank is:
(a) ₹6000 (b) ₹8000
(c) ₹9000 (d) ₹10000

58. The curved surface area of a cylindrical pillar is 264 m^2 and its volume is 924 m^3 . Find the ratio of its diameter to its height.

(a) 3 : 7 (b) 7 : 3 (c) 6 : 7 (d) 7 : 6

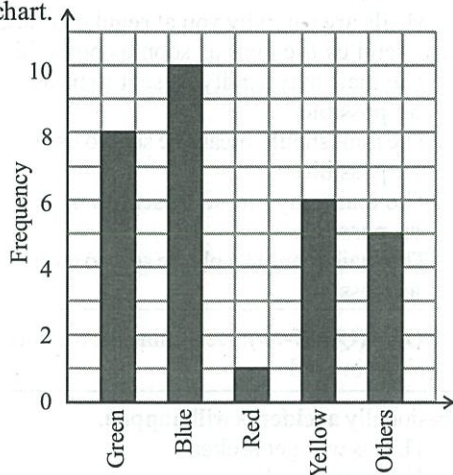
59. P, Q, R, S, T and U are points on the circle shown below and the length of arc PQR is 6 cm. Then length of arc STU is



- (a) 12 cm
(b) 6π cm
(c) 6 cm
(d) cannot be determined from the given data

DIRECTIONS (Qs. 60-62): Read the following passage and answer the questions that follow.

Miss Neha asked the children in her class, 'What is your favourite colour?' Her results are shown on the bar chart.



60. How many children are in her class?
(a) 30 (b) 42 (c) 28 (d) 37
61. What is the mode of the distribution?
(a) Green (b) Blue
(c) Red (d) Yellow
62. Above given information is also to be represented in a pie-chart. Calculate the angle of the sector representing yellow.
(a) 90° (b) 60° (c) 52° (d) 72°

63. An article costs ₹ 50 presently. The rate of inflation is 300%. What will be cost of this article after two years?

(a) ₹ 200 (b) ₹ 600
(c) ₹ 800 (d) ₹ 1000

64. A dishonest shopkeeper professes to sell his groceries at his cost price, but uses a false weight of 900 grams for each kilogram. Find his gain percentage.

(a) $91\frac{9}{9}\%$ (b) $100\frac{9}{9}\%$
(c) $100\frac{11}{9}\%$ (d) $95\frac{9}{9}\%$

65. There were 35 students in a hostel. If the number of students be increased by 7, the expenditure on food increases by ₹ 42 per day while the average expenditure of students is reduced by ₹ 1. What was the initial expenditure on food per day?

(a) ₹ 432 (b) ₹ 442
(c) ₹ 420 (d) ₹ 400

66. There were 24 students in a class. One of them, who was 18 years old, left the class and his place was filled up by a new comer. If the average of the class was thereby lowered by 1 month, the age of new comer is

(a) 14 years (b) 15 years
(c) 16 years (d) 17 years

67. Find two natural numbers whose sum is 85 and the least common multiple is 102.

(a) 30 and 55 (b) 17 and 68
(c) 35 and 55 (d) 51 and 34

68. In a fort there was sufficient food for 200 soldiers for 31 days. After 27 days, 120 soldiers left the fort. For how many extra days will the rest of the food last for the remaining soldiers?

(a) 12 days (b) 10 days
(c) 8 days (d) 6 days

69. 10 is added to a certain number, the sum is multiplied by 7, the product is divided by 5 and 5 is subtracted from the quotient. The remainder left is half of 88. What is the number?

(a) 21 (b) 20 (c) 25 (d) 30

70. 19 persons went to a hotel for a combined dinner party. 13 of them spent ₹ 79 each on their dinner and the rest spent ₹ 4 more than the average expenditure of all the 19. What was the total money spent by them?

(a) 1628.4 (b) 1534
(c) 1492 (d) None of these

71. Two typists of varying skills can do a typing job in 6 minutes if they work together. If the first typist typed alone for 4 minutes and then the second typist typed alone for 6 minutes, they would be left with $\frac{1}{5}$ of the whole work. How many

minutes would it take the slower typist to complete the typing job working alone?

- (a) 10 minutes (b) 15 minutes
(c) 12 minutes (d) 20 minutes
72. The sum of two numbers is equal to thrice their difference. If the smaller of the numbers is 10 find the other number.
(a) 15 (b) 30
(c) 40 (d) None of these.
73. If a person repaid ₹ 22500 after 10 years of borrowing a loan, at 10% per annum simple interest find out what amount did he take as a loan?
(a) 11,225 (b) 11,250
(c) 10,000 (d) 7,500
74. A sum of money invested at simple interest triples itself in 8 years. How many times will it become in 20 years time?
(a) 8 times (b) 7 times
(c) 6 times (d) 9 times.
75. Simplify: $\frac{69 \times 69 \times 69 - 65 \times 65 \times 65}{69 \times 69 + 69 \times 65 + 65 \times 65}$
(a) 1 (b) 4
(c) 0.216 (d) 0.164

LANGUAGE TEST

DIRECTIONS (Qs. 76-80): Choose the best option to complete the sentences given below.

76. _____ is also an art, which many people do not have.
(a) Speaking (b) Listening
(c) Sleeping (d) Pulling
77. Ma'am, _____ I ask a question?
(a) can (b) should
(c) must (d) could
78. Don't _____ the hand that feeds you.
(a) bite (b) bend
(c) burn (d) bark
79. It was _____ very cold today in the afternoon.
(a) surprisingly
(b) intentionally
(c) interestingly
(d) happily
80. I'm afraid her husband has got a _____ addiction to gambling.
(a) regular
(b) interesting
(c) chronic
(d) dangerous

DIRECTIONS (Qs. 81-83): Choose the opposite of the word underlined in each sentence.

81. He vilified the whole incident.
(a) favoured (b) abused
(c) rip down (d) cursed
82. He was full of disdain for all the poor people.
(a) dislike (b) flattery
(c) scorn (d) respect
83. He came out as a disgruntled man.
(a) contented (b) dislike
(c) flattered (d) courageous

DIRECTIONS (Qs. 84-86): Change the following sentences into passive form.

84. Put all the books away.
(a) Let all the books be put away.
(b) Books should be put away.
(c) Books are to be put away.
(d) Let's put all the books away.
85. You should eat your meals at regular times.
(a) Meals should be eaten at regular times.
(b) Meals should be eaten by you at regular times.
(c) Meals are to be eaten by you at regular times.
(d) Meals are eaten by you at regular times.
86. Please send us the mail as soon as possible.
(a) The mail may kindly be sent to us as soon as possible.
(b) The mail should please be sent to us as soon as possible.
(c) The mail may please be sent to us as soon as possible.
(d) The mail should be please sent to us as soon as possible.

DIRECTIONS (Qs. 87-89): Determine the meaning of the expressions in bold.

87. Occasionally **accidents will happen**.
(a) Things will get broken
(b) Things will spill
(c) Things take place often
(d) Things will simply occur
88. Kusum would have gone home, if she hadn't **burned her bridges**.
(a) Ended her relationships
(b) Burned her house down
(c) Lost her way
(d) Been angry

89. **In the end**, the prisoner confessed the both crimes.

- (a) Finally (b) Towards the end
(c) By the end (d) At the end

DIRECTIONS (Qs. 90-92): Complete the conversations using the correct option.

90. Wilson to Francis: Which plane has been hijacked?

Francis: _____

- (a) Ask the President.
(b) I was not in that plane.
(c) The one which was flying from Indonesia to Delhi.
(d) Let's read the newspapers.

91. Wilson: What do the hijackers want?

Francis: _____

- (a) They want to get the terrorists released.
(b) They want to go globe trotting.
(c) They want to party in the plane.
(d) I can't tell.

92. Ravi: Do you know Mr. Sharma?

Ela: I think _____

- (a) I have met him once before.
(b) No, he is an unknown person
(c) Why should I?
(d) What made you ask me this?

DIRECTIONS (Qs. 93-96): In questions given below, choose the option which can be substituted for the given sentences.

93. One who is bad in spellings -

- (a) Cacographer (b) Choreographer
(c) Curator (d) Graphologist

94. A person appointed two parties to solve a dispute -

- (a) Auditor (b) Arbitrator
(c) Amateur (d) Dextrous

95. One who feeds on human flesh -

- (a) Omnivore (b) Carnivore
(c) Cannibal (d) Herbivore

96. A person having a sophisticated charm

- (a) Debonair (b) Connoisseur
(c) Chauvinist (d) Epicure

DIRECTIONS (Qs. 97-100) : Read the following passage carefully and answer the questions given below it:

And then Gandhi came. He was like a powerful current of fresh air that made us stretch ourselves and take deep breaths, like a beam of light that pierced the dark-

ness and removed the scales from our eyes, like a whirlwind that upset many things but most of all the working of people's minds. He did not descend from the top; he seemed to emerge from the millions of India, speaking their language and incessantly drawing attention to them and their appalling condition. Get off the backs of these peasants and workers, he told us, all of you who live by their exploitation; get rid of the system that produces this poverty and misery.

97. Gandhi came like a powerful current of fresh air and

- (a) awakened us to the plight of the masses in the grip of oppressors
(b) made us patriotic
(c) emboldened us to attack and destroy the oppressors
(d) praised our culture

98. The rise of Gandhi

- (a) shocked people
(b) made India powerful
(c) made the condemnation of the exploiter final
(d) made women feel secure

99. Gandhi fought the

- (a) rich (b) oppressor
(c) apathetic masses (d) unjust system

100. The conspicuous role of Gandhi is that of a

- (a) father (b) reformer
(c) teacher (d) liberator

GENERAL KNOWLEDGE

101. Who was the Governor-General of India during the 'Sepoy Mutiny'?

- (a) Lord Dalhousie (b) Lord Harding
(c) Lord Canning (d) Lord Lytton.

102. Which of the following statements is incorrect?

- (a) Goa attained full statehood in 1987
(b) Diu is an island in the Gulf of Khambhat
(c) Daman & Diu were separated from Goa by the 56th Amendment of the Constitution of India
(d) Dadar & Nagar Haveli were under French colonial rule till 1954.

103. On which river is Washington DC situated?

- (a) Potomac (b) Irrawaddy
(c) Mississippi (d) Hudson

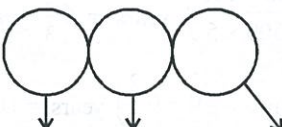
104. When body is accelerated:

- (a) Its velocity never changes
(b) Its speed will always changes
(c) Its direction always changes
(d) Its speed may or may not change

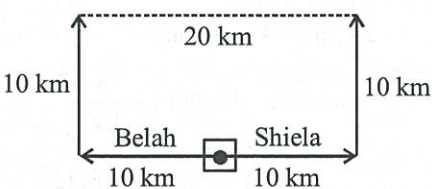
105. Which of the following is not an agency of UN?
 - (a) World Bank
 - (b) International Atomic Energy Agency
 - (c) Universal Postal Union
 - (d) None of the above
106. Which kind of missile is BRAHMOS?
 - (a) Medium range ballistic missile
 - (b) Supersonic cruise missile
 - (c) Short range tactical missile
 - (d) Ultrasonic cruise missile
107. Which of the following is not a unit of energy?
 - (a) Calorie
 - (b) Joule
 - (c) Electron volt
 - (d) Watt
108. Who among the following has been called the 'Napoleon of India'?
 - (a) Ashoka
 - (b) Samudragupta
 - (c) Chandragupta
 - (d) Harshavardhana
109. Who is known as the 'Grand Old Man of India'?
 - (a) Dadabhai Naoroji
 - (b) Gopal Krishna Gokhale
 - (c) Bal Gangadhar Tilak
 - (d) A.O. Hume
110. Which amongst the following has the power to regulate the right of citizenship in India?
 - (a) Union Cabinet
 - (b) Parliament
 - (c) Supreme Court
 - (d) Law Commission
111. The Baglihar Hydroelectric power project in J & K is built across the river.
 - (a) Beas
 - (b) Chenab
 - (c) Jhelum
 - (d) Sutlej
112. Which is the longest bone in the human body?
 - (a) Fibula
 - (b) Radius
 - (c) Stapes
 - (d) Femur
113. A US team of scientists has found that the mechanism responsible for the ageing process is located
 - (a) inside the face
 - (b) inside the skin
 - (c) inside the brain
 - (d) inside the heart
114. The outer most layer of the Sun is known as
 - (a) Corona
 - (b) Photosphere
 - (c) Chromosphere
 - (d) Granule
115. Indian Institute of Science, Bangalore was founded by
 - (a) CV Raman
 - (b) Jamsetji Tata
 - (c) Vikram Sarabhai
 - (d) None of these
116. Which among the following is not a gallantry medal?
 - (a) Ashok Chakra
 - (b) Arjuna Award
 - (c) Param Vir Chakra
 - (d) Shaurya Chakra
117. Which one of the following pairs of water bodies are connected by the Suez Canal?
 - (a) Indian Ocean- Pacific Ocean
 - (b) Mediterranean sea- Black Sea
 - (c) Mediterranean Sea-Red Sea
 - (d) Atlantic Ocean- Pacific Ocean
118. Kalhana's 'Rajatarangini' is a history of
 - (a) Kashmir
 - (b) Harsha's reign
 - (c) Rajasthan
 - (d) Chandragupta's reign
119. Who was the first woman to climb Mount Everest?
 - (a) Junko Tabei
 - (b) Tenzing Norgay
 - (c) Aarti Pradhan
 - (d) Bachendri Pal
120. Who founded the Asiatic Society of Bengal in Kolkata?
 - (a) Warren Hastings
 - (b) John Shore
 - (c) Sir William Jones
 - (d) Lord Cornwallis
121. When is the World Poetry Day recognized by the UNESCO observed?
 - (a) 02 February
 - (b) 30 December
 - (c) 21 March
 - (d) 14 February
122. 38th parallel is a boundary line between _____.
 - (a) United States and Canada
 - (b) Pakistan and India
 - (c) Turkey and Cyprus
 - (d) South and North Korea
123. National Sports Day is observed in India annually on _____.
 - (a) 26 August
 - (b) 27 August
 - (c) 28 August
 - (d) 29 August
 - (e) 30 August
124. Which state has launched in 2021 an educational mission named as "Shiksha Mission"?
 - (a) Tripura
 - (b) Uttar Pradesh
 - (c) West Bengal
 - (d) Arunachal Pradesh
125. Who amongst the following won National Film Awards 2021?
 - (a) Kangna Ranaut
 - (b) Deepika Padukone
 - (c) Tapsee Pannu
 - (d) None of these

HINTS & EXPLANATIONS

1. (b) By looking, the dice position, we can say that 2, 4, 5 and 6 are adjacent faces of 3. Therefore, if 1 number is at the bottom then 3 will be on the top.
2. (d)
3. (b) (a) BINARY can not be formed, there is no 'B' in the word DICTIONARY
(c) NATION can not be formed, as there is only one 'N' in the word DICTIONARY
(d) ADDITION can not be formed, as there is only one 'D' in the word DICTIONARY

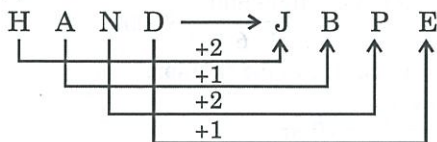
4. (d)
 

Editor Newspaper Journalist

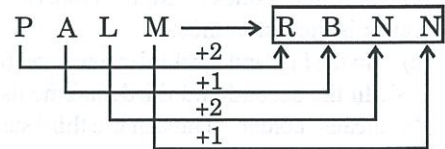
5. (a)
 

∴ Required distance
= 10 + 10 = 20 km

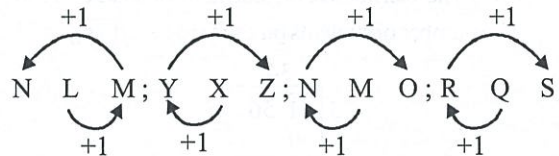
6. (a) Only 'S' can be prefixed to the given words.
New words are:
STILL, STABLE, SPILE, STAB, SPRING
7. (c) Dictionary order :
Command → Commerce
(1) (6)
→ Commit → Conceive
(2) (4)
→ Conduct → Connect
(5) (3)
8. (b) Stomach is a part of body.
Similarly, library has different kinds of books.
9. (d) As,



Similarly,



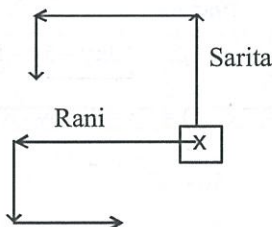
10. (a) As, $7 \times 6 = 42$
Similarly, $6 \times 6 = 36$
11. (d)
12. (c) Originally the colour of turmeric is yellow, here, yellow means red. So the colour of turmeric is red.
13. (d)
14. (c) All are parts of car.
15. (d) All are divisible by 5 except 256.
16. (a)



17. (d) Annual - 1 year Monthly - 30 days
Weekly - 7 days Biannual - 6 month
Fortnightly - 15 days.

18. (c) Water image of

C	O	M	M	I	S	S	I	O	N
↓	↓	↓	↓	↓	↓	↓	↓	↓	↓
C	O	W	W	I	2	2	I	O	N

19. (d)
 

Rani is facing towards East and Sarita is facing towards South.

20. (a) 21. (b)
22. (a) $5 + 2 - 12 \times 6 \div 2 = 10$
Can be written in original signs as
 $5 \times 2 + 12 \div 6 - 2$
 $= 10 + 2 - 2 = 10$

23. (d) Total number of students in the class = 45.
Neha's rank from first = 15th
So number of students from the last
= 45 - (1 + 14) = 30

So, Neha's rank from the last is 31st.

24. (c) Kathir > Ganesh > Raju > Apparu

Kathir is the senior most

25. (c) In the first and the third statements '6' means 'is'. In the second and third statements we get '4' means 'colour'. Thus, in the third statement, '3' means 'fun'.

26. (b) $\sqrt{9a^4 b^8}$
 $= \sqrt{3 \times 3 \times a^2 \times a^2 \times b^4 \times b^4}$
 $= \sqrt{3a^2 b^4 \times 3a^2 b^4} = 3a^2 b^4$

27. (d) The sum of the numbers in each row and each column is 30.

28. (d) The total number of students in the square = 1156
The number of students on each side = $\sqrt{1156} = 34$

$$\begin{array}{r} 34 \\ 3 \overline{) 1156} \\ \underline{9} \\ 256 \\ 64 \overline{) 256} \\ \underline{256} \\ 0 \end{array}$$

There are 34 students on each side of the square.

29. (a) $\frac{38a^3 b^3 c^2 - 19a^4 b^2 c}{19a^2 bc}$
 $= \frac{38a^3 b^3 c^2}{19a^2 bc} - \frac{19a^4 b^2 c}{19a^2 bc} = 2ab^2 c - a^2 b$
30. (b) $10xy - 5y + 8 - 16x = \underline{10xy - 5y} - \underline{16x + 8}$
 $= 5y(2x - 1) - 8(2x - 1) = (2x - 1)(5y - 8)$

31. (c) $4^{\sqrt{x} \cdot \sqrt{x}} = 256 = 4^4$
 $\Rightarrow \sqrt{x} \cdot \sqrt{x} = 4 = 2^2 \Rightarrow \sqrt{x} = 2 \Rightarrow x = 4$

32. (a)
 $\therefore 21952 = 2 \times 2 \times 2 \times 2 \times 2 \times 2 \times 7 \times 7 \times 7$
 $= 2^3 \times 2^3 \times 7^3$
 $\therefore \sqrt[3]{21952} = \sqrt[3]{2^3 \times 2^3 \times 7^3} = 2 \times 2 \times 7 = 28$
 \therefore Digit in the units' place of $\sqrt[3]{21952} = 8$.

33. (d) $x^2 - 7x + 10 = 0$
 $\Rightarrow (x - 5)(x - 2) = 0$
 $\Rightarrow x = 5, 2$
 $x^2 - 10x + 16 = 0$
 $\Rightarrow (x - 8)(x - 2) = 0$
 $\Rightarrow x = 8, 2$
 \therefore Common root = 2.

34. (b) S.I. for 10 years

$$= ₹ \left(1000 \times \frac{5}{100} \times 10 \right) = ₹ 500$$

Principal after 10 years becomes = ₹(1000 + 500)
= ₹1500

Amount on that principal after t years = ₹2000

$$\therefore \text{S.I. on it} = ₹(2000 - 1500) = ₹500$$

$$\therefore t = \left(\frac{500 \times 100}{1500 \times 5} \right) \text{ years} = 6\frac{2}{3} \text{ years}$$

$$\therefore \text{Total time} = \left(10 + 6\frac{2}{3} \right) \text{ years} = 16\frac{2}{3} \text{ years}$$

35. (c) P = ₹16000, r = 10% p.a.
 = 5% per half year
 n = 2 years = 4 half years

$$\therefore \text{Amount} = 16000 \left(1 + \frac{5}{100} \right)^4$$

$$= 16000 \times \left(\frac{21}{20} \right)^4 = \frac{16000 \times 194481}{160000}$$

$$= 19448.10 = ₹19448 \text{ (approx.)}$$

36. (d) Remaining part

$$= 1 - \left(\frac{1}{3} + \frac{1}{6} \right) = \frac{1}{2}$$

Average rate % per annum (R)

$$= \left(\frac{1}{3} \times 3 \right) + \left(\frac{1}{6} \times 6 \right) + \left(\frac{1}{2} \times 8 \right) = 6\%$$

SI = ₹ 600

T = 2 years, P = ?

$$SI = \frac{PTR}{100}$$

$$P = \frac{100 \times SI}{TR} = \frac{100 \times 600}{2 \times 6} = ₹5000$$

37. (c) Each side of the rhombus

$$= \frac{40 \text{ cm}}{4} = 10 \text{ cm}$$

Length of the other diagonal

$$= 2 \times \sqrt{10^2 - \left(\frac{12}{2}\right)^2}$$

$$= 2 \times \sqrt{100 - 36}$$

$$= 2 \times \sqrt{64} \text{ cm} = 16 \text{ cm.}$$

38. (b) Amount, $A = ₹5324$

$$P = ₹4000$$

$$\text{Rate} = 10\%$$

$$A = P \left(1 + \frac{r}{100}\right)^t$$

$$5324 = 4000 \left(1 + \frac{10}{100}\right)^t$$

$$= 4000 \left(\frac{110}{100}\right)^t = 4000 \times \left(\frac{11}{10}\right)^t$$

$$\frac{5324}{4000} = \left(\frac{11}{10}\right)^t$$

$$\frac{1331}{1000} = \left(\frac{11}{10}\right)^t$$

$$\left(\frac{11}{10}\right)^3 = \left(\frac{11}{10}\right)^t$$

$$\therefore t = 3 \text{ years}$$

39. (c) Sindhu's age = 40 years

$$\text{Smita's age} = 20 \text{ years}$$

Let us suppose x years ago, Sindhu's age was thrice Smita's age.

Hence,

$$x \text{ years ago, Sindhu's age}$$

$$= 40 - x$$

$$x \text{ years ago, Smita's age}$$

$$= 20 - x$$

$$x \text{ years ago, Sindhu's age}$$

$$= 3 \text{ times Smita's age}$$

$$\Rightarrow 40 - x = 3(20 - x)$$

$$40 - x = 60 - 3x$$

$$40 - x + 3x = 60 - 3x + 3x$$

$$(\text{adding } 3x \text{ on both sides})$$

$$40 + 2x = 60$$

$$40 + 2x - 40 = 60 - 40$$

$$(\text{subtracting } 40 \text{ from both sides})$$

$$2x = 20$$

$$x = 10 \text{ years}$$

Thus, 10 years ago, Sindhu was three times as old as Smita.

40. (d) Let the cost price be ₹100.

So, when C.P. = 100, loss of 20% means

$$\text{S.P.} = 100 - 20 = 80$$

Profit of 5% means S.P.

$$= 100 + 5 = 105$$

The difference of two S.P.

$$= 105 - 80 = 25$$

If the difference is 25, C.P. = ₹100

$$\text{If the difference is ₹800, C.P.} = \frac{100}{25} \times 800$$

$$= ₹3200.$$

41. (c) Amount = ₹9125

$$\text{Interest} = ₹625$$

$$\text{Principal} = \text{Amount} - \text{Interest}$$

$$= ₹9125 - ₹625 = ₹8500$$

42. (b) Given, $A + B + C = 53$... (i)

$$\text{Also, } A = B + 7 \text{ and } B = C + 8$$

\therefore From (i), we get

$$(B + 7) + B + (B + 8) = 53$$

$$\Rightarrow 3B = 54 \Rightarrow B = 18$$

$$\Rightarrow A = 25 \text{ and } C = 10$$

$$\therefore A : B : C = 25 : 18 : 10.$$

43. (b) Actual height = 5 feet 5 inches
 $= 5 \times 12 \text{ inches} + 5 \text{ inches} = 65 \text{ inches}$
 Height given by mistake

$$= \frac{125}{100} \times 65 \text{ inches} = 81.25 \text{ inches}$$

\therefore Required percentage error

$$= \frac{(81.25 - 65)}{81.25} \times 100\%$$

$$= \left(\frac{16.25}{81.25} \times 100\right)\% = 20\%.$$

44. (b) Area of the quadrilateral

$$= \frac{1}{2} \times \text{diagonal} \times \text{sum of the off-sets}$$

$$= \frac{1}{2} \times 230 \times (60 + 70) \text{ sq. m.}$$

$$= 115 \times 130 \text{ sq. m.} = 14950 \text{ sq. m.}$$

45. (d) Volume of the godown = $7 \times 4.5 \times 2 \text{ m}^3$

$$= 700 \times 450 \times 200 \text{ cm}^3$$

$$\text{Volume of the carton} = 70 \times 22.5 \times 40 \text{ cm}^3$$

Number of cartons

$$= \frac{\text{Volume of godown}}{\text{Volume of carton}}$$

\therefore Number of cartons

$$= \frac{700 \times 450 \times 200}{70 \times 22.5 \times 40} = 1000$$

$$\text{and } \frac{4}{x} + \frac{6}{y} = 1 - \frac{1}{5} = \frac{4}{5}$$

By (1) and (2)

$$x = 10, y = 15$$

Hence slower typist complete the jobs in 15 minutes.

72. (d) Let largest no. = x

$$\therefore x + 10 = 3(x - 10)$$

$$10 + 30 = 3x - x$$

$$40 = 2x$$

$$x = 20$$

$$\therefore \text{other number} = 20$$

73. (b) Let P = ₹ x

$$SI = \frac{x \times 10 \times 10}{100} = x$$

$$A = P + SI$$

$$22500 = x + x$$

$$2x = 22500$$

$$x = 11250$$

\therefore He took ₹ 11,250 as a lone.

74. (c) Let P = x

$$A = 3x$$

$$SI = 2x$$

$$T = 8 \text{ years}$$

$$R = \frac{2x \times 100}{x \times 8} = 25\%$$

$$\text{Now } SI = \frac{x \times 25 \times 20}{100} = 5x$$

$$A = 5x + x = 6x$$

\therefore In 6 years it becomes 6 times

75. (b)
$$\frac{69 \times 69 \times 69 - 65 \times 65 \times 65}{69 \times 69 + 69 \times 65 + 65 \times 65}$$

$$\text{Using } \frac{a^3 - b^3}{a^2 + ab + b^2} = a - b$$

$$\therefore 69 - 65 = 4$$

76. (b) Listening is also an art, which many people do not have.
77. (a) Ma'am, Can I ask a question?

78. (a) Bite
79. (a) It was surprisingly very cold today in the afternoon.
80. (c) Chronic
81. (a) He favoured the whole incident.
83. (d) He was full of respect for all the poor people.
84. (a) Let all the books be put away.
85. (b) Meals should be eaten by you at regular times.
86. (a) The mail may kindly be sent to us as soon as possible.
87. (a) Things will simply occur.
88. (a) Ended her relationships.
89. (d) At the end
90. (c) Francis: The one which was flying from Indonesia to Delhi.
91. (a) Francis: They want to get the terrorists released.
92. (a) Ela: I think I have met him once before
93. (a) Cacographer
94. (b) Arbitrator
95. (c) Cannibal
96. (a) Debonair
97. (a) The author states how Gandhi showed the mirror to the masses on how the cruel system is deteriorating the country and urged them to stand up for themselves.
98. (b) The rise of Gandhi empowered the people which thus made the country strong.
99. (c) Gandhi fought the unjust system that was exploiting the peasants and workers.
100. (d) As seen in the paragraph, Gandhi is seen as a liberator. A liberator is a person who liberates a person or place from imprisonment or oppression.
101. (c) 102. (d) 103. (a) 104. (b)
105. (b) 106. (b) 107. (d) 108. (b)
109. (a) 110. (b) 111. (b) 112. (d)
113. (c) 114. (b) 115. (b) 116. (b)
117. (c) 118. (a) 119. (a) 120. (c)
121. (c) 122. (d) 123. (d) 124. (d)
125. (a)