

AISSEE – 2019

Section – A (Mathematics)

1. With the help of ruler and compass it is not possible to construct an angle of –
 - (a) 22.5°
 - (b) 37.5°
 - (c) 67.5°
 - (d) 40°
2. What time period is taken when interest is calculated half yearly?
 - (a) Twice as much as the number of given years
 - (b) Half as much as the number of given year
 - (c) Same as the number of given year
 - (d) None of the above
3. If a number is doubled then which of the following is a correct statement?
 - (a) Its cube is two times the cube of the given number
 - (b) Its cube is three times the cube of the given number
 - (c) Its cube is six times the cube of the given number
 - (d) Its cube is eight times the cube of the given number
4. Which of the following is the cube root of $-64/243$?
 - (a) $7/4$
 - (b) $-7/4$
 - (c) $4/7$
 - (d) $-4/7$
5. $[(1/2)^{-1} + (2/3)^2 - (3/4)^0]^{-2}$ is equal to –
 - (a) $81/484$
 - (b) $81/169$
 - (c) $169/81$
 - (d) $16/81$
6. Which of the following is equal to $x^3 - 225x$?
 - (a) $x(1 - 15x)(1 + 15x)$
 - (b) $x(x - 15)(x + 15)$
 - (c) $x(1 - 15x)(1 - 15x)$
 - (d) $x(1 + 15x)(1 - 15x)$
7. The points $(-3, 2)$ and $(2, -3)$ represent –
 - (a) different points
 - (b) same points
 - (c) the origin
 - (d) None of these
8. If the dimensions of a room are l, b and h ($l \rightarrow$ length, $b \rightarrow$ breadth and $h \rightarrow$ height) then which of the following is the area of its four walls?
 - (a) $2h(l + b)$
 - (b) $2h(l + h)$
 - (c) $2l(h + h)$
 - (d) $2h + l + b$
9. If $[1X 2Y 6Z]$ is a number divisible by 9, then the least value of $X + Y + Z$ is –
 - (a) 0
 - (b) 1
 - (c) 6
 - (d) 9
10. Which of the following is the Multiplicative identity for rational numbers?
 - (a) 1
 - (b) -1
 - (c) 0
 - (d) None
11. The mid value of a class interval is 42. If the class size is 10, then the upper and lower limits of the class are –
 - (a) 37.5 and 47.5
 - (b) 47 and 37
 - (c) 37 and 47
 - (d) 47.5 and 37.5
12. The speed of a car is $54 \frac{1}{2}$ km/hr. The distance travelled by it in $\frac{7}{2}$ hours $\frac{35}{2}$ minutes is –
 - (a) $\frac{999}{48}$ km
 - (b) $\frac{9929}{48}$ km
 - (c) $\frac{9919}{48}$ km
 - (d) $\frac{9919}{28}$ km
13. The ages of A and B are in the ratio of 5 : 7. Four years from now ratio of their ages will be 3 : 4. The present age of B is –
 - (a) 20 years
 - (b) 28 years
 - (c) 15 years
 - (d) 21 years

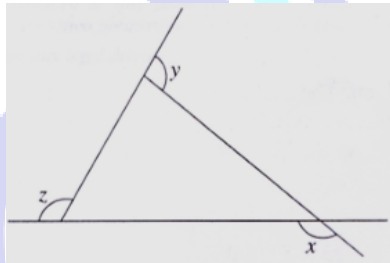
14. 36 is divided into parts such that 5 times the first part added to 3 times the second part makes 142. The two parts are –

- (a) 10 and 26 (b) 12 and 24
(c) 15 and 21 (d) 17 and 19

15. Divide Rs. 1500 into two parts so that 10% of the larger part exceeds 8% of smaller part by Rs. 60. The values of larger and smaller parts are:

- (a) Rs. 1200 and Rs. 300
(b) Rs. 850 and Rs. 650
(c) Rs. 900 and Rs. 600
(d) Rs. 1000 and Rs. 500

16. The value of $x + y + z$ in the adjoining figure is –



- (a) 180° (b) 270°
(c) 360° (d) 720°

17. If an exterior angle of a regular polygon is of measure 12° , then the number of its side is –

- (a) 12 (b) 18
(c) 22 (d) 30

18. The smallest whole number by which 44 should be multiplied so as to make it a perfect square is –

- (a) 4 (b) 11
(c) 6 (d) 5

19. There are 12321 workers in a factory. They stand in such a way that the number of workers in each row is equal to the number of rows. How many workers stand in each row?

- (a) 111 (b) 121
(c) 131 (d) 141

20. Cubical boxes of volume 15625 cm^3 each are put in a cubical store of side 2.5 m. How many such boxes can be put in the store?

- (a) 100 (b) 250
(c) 500 (d) 1000

21. If $a^2 + \frac{1}{a^2} = 27$, then the value of $a - \frac{1}{a}$ is –

- (a) ± 4 (b) ± 3
(c) ± 6 (d) ± 5

22. If the sum of the lengths of bases of a trapezium is 12 cm and area of 14.1 cm^2 , then its altitude will be –

- (a) 2.35 cm (b) 4.70 cm
(c) 9.40 cm (d) 1 cm

23. If the length, width and height of a cuboid are 4.2 m, 3 m and 1.1 m, then its capacity in litres will be –

- (a) 12860 litres (b) 13860 litres
(c) 14860 litres (d) 15860 litres

24. A road roller is 350 cm long and its diameter is 84 cm. It takes 500 complete revolutions to travel the road. The area covered by it in m^2 will be –

- (a) 4620 (b) 6420
(c) 2460 (d) 4260

25. A solid cuboidal piece of wood measures $3 \text{ m} \times 2.5 \text{ m} \times 8 \text{ cm}$. Find the weight of the piece if 1 cubic cm of wood weights 9 grams.

- (a) 4500 kg (b) 5000 kg
(c) 5400 kg (d) 5600 kg

26. A well was dug with 14 m inner diameter and was 8 m deep. The earth dug out of it was evenly spread out on a rectangular plot of side 10 m B 8 m. Find the raise in height of the plot.

- (a) 15.6 m (b) 15.4 m
(c) 15 m (d) 15.5 m

27. If $5^{3x+4} = 25 \times 5^{4x-1}$ then the value of x is –

- (a) - 3 (b) - 5
(c) 5 (d) 3

28. Sum of the digits of a two digit number is 9. If 9 is subtracted from the number, the digits interchange their places. The original number is –

- (a) 81 (b) 54
(c) 72 (d) 45

29. You are given the multiplication of two numbers as below –

$$\begin{array}{r} 5A3 \\ \times B2 \\ \hline 1C46 \\ + 2D92 \\ \hline E1FG6 \end{array}$$

The values of the letters A, B, C, D, E, F and G are –

- (a) A = 2, B = 4, C = 0, D = 0, E = 2, F = 9, G = 6
(b) A = 7, B = 4, C = 1, D = 0, E = 2, F = 0, G = 6
(c) A = 2, B = 4, C = 1, D = 0, E = 2, F = 0, G = 6
(d) A = 7, B = 4, C = 0, D = 9, E = 2, F = 9, G = 6

30. From a pack of 52 playing cards, one card is drawn at random. The probability of the drawn card being a black ten or a king is –

- (a) $5/26$ (b) $3/26$
(c) $3/13$ (d) $2/13$

31. A spider is climbing a wall. It climbs up 5 cm, falls back 3 cm, climbs up another 4 cm, falls back 6 cm and climbs up another 5 cm. How far the spider has climbed from its starting point?

- (a) 5 cm (b) 6 cm
(c) 4 cm (d) 23 cm

32. What will be the amount and compound interest on Rs. 5000 in 3 years if the rate of interest is 4% for the first year, 3% for the second year and 2% for the third year?

- (a) Rs. 5436.12 and Rs. 436.12
(b) Rs. 5563.12 and Rs. 563.12
(c) Rs. 5063.12 and Rs. 63.12
(d) Rs. 5463.12 and Rs. 463.12

33. The smallest square number which is divisible by each one of the number 8, 9, 10 is –

- (a) 2600 (b) 3600
(c) 2900 (d) 3900

34. If 25% of a number is less than 18% of 650 by 19, then find the number –

- (a) 293 (b) 329
(c) 239 (d) 392

35. If the cost price is 25% of selling price then the profit percentage is –

- (a) 300% (b) 305%
(c) 350% (d) 355%

36. Area of rectangle whose length is $4ab$ and breadth is $6b^2$ is –

- (a) $24ab$ (b) $24ab^2$
(c) $24ab^3$ (d) $24ab^4$

37. The total surface area of a cone having its slant height 9 dm and diameter of its base as 24 dm is –

- (a) 792 sq. dm (b) 729 sq. dm
(c) 279 sq. dm (d) 297 sq. dm

38. A cube of side 4 cm contains a sphere touching its side. Then the volume of the gap in between is –

- (a) 30 cu. cm (b) 30.48 cu. cm
(c) 30.84 cu. cm (d) 31 cu. cm

39. A chord of a circle is of length of 6 cm and it is at a distance of 4 cm from the centre. Find the radius of the circle –

- (a) 3 cm (b) 4 cm
(c) 5 cm (d) 6 cm

40. The mean of 40 observations was 160. It was detected on rechecking that the value of 165 was wrongly copied as 125 for computation of mean. Find the correct mean –

- (a) 161 (b) 159
(c) 166 (d) 111

41. If $x + y = 12$ and $xy = 27$ then the value of $x^3 + y^3$ is –

- (a) 756 (b) 765
(c) 567 (d) 576

42. In what time will a sum of money double itself at $6\frac{1}{4}\%$ p.a. simple interest?

- (a) 13 years (b) 14 years
(c) 15 years (d) 16 years

43. In a triangle ABC, E is the midpoint of median AD. Then the area of $\triangle BED$ is –

- (a) Area of $\triangle ABC$
(b) 0
(c) $\frac{1}{2}$ (Area of $\triangle ABC$)
(d) $\frac{1}{4}$ (Area of $\triangle ABC$)

44. The radius of a spherical balloon increase from 7 cm to 14 cm as air is being pumped into it. Find the ratio of surface areas of the balloon in the two cases –

- (a) 1 : 4 (b) 1 : 2
(c) 4 : 1 (d) 2 : 1

45. Two isosceles triangles have equal vertical angles and their areas in the ratio 25 : 36. Find the ratio of their corresponding heights –

- (a) 4 : 5 (b) 5 : 6
(c) 6 : 7 (d) 5 : 7

46. The face value of each share is Rs. 10. If dividend is 16% then what will be the income from 600 shares?

- (a) Rs. 900 (b) Rs. 960
(c) Rs. 860 (d) Rs. 800

47. A solid gold ball of radius 7 cm was melted and then drawn into a wire of diameter 0.2 cm. Find the length of the wire.

- (a) 457.33 m (b) 475.33 m
(c) 547.33 m (d) 745.33 m

48. A horse is tethered for grazing inside a rectangular field 70 m by 52 m and is tethered to one corner by a rope 21 m long. How much area can it graze?

- (a) 346.5 sq. m (b) 340 sq. m
(c) 349.5 sq. m (d) 348.5 sq. m

49. A race boat covers a distance of 66 km downstream in 110 minutes. It covers the same distance upstream in 120 minutes. The speed of the boat in still water is 34.5 km/hr. The speed of the stream will be –

- (a) 1.5 km/hr (b) 2 km/hr
(c) 2.5 km/hr (d) 3 km/hr

50. The value of 10001^2 –

- (a) 1002001 (b) 100201
(c) 10002001 (d) 1000201

Section - B (English)

51. The correctly punctuated sentence is –

- (a) Mina said, wheres' Kishore?
(b) Mina said, where's kishore !
(c) Mina said, Where's Kishore?"
(d) Mina said, 'Wheres' Kishore !'

52. 'TO LET THE CAT OUT OF THE BAG' means –

- (a) To jump out of a problem
(b) Have a pet animal
(c) To feel extremely happy
(d) Reveal something that was kept a secret before

53. Choose the correct order to make the following sentence meaningful –

Month/ while/ Mumbai/ Last/ it/

1 2 3 4 5

in/ happened/ living/ I was

- (a) proudly (b) pride
(c) proudly (d) proudness

Directions- (67 - 69) Read the following passage and answer the questions that follow-

Books are by far, the most lasting product of human effort. Temples crumble into ruins. Pictures and statues decay, but books survive. Time does not destroy the great thoughts which are as fresh today as when they first passed through the author's mind ages ago. The only effect of time has been to throw out the bad products, for nothing in literature can survive long unless it is really good and of lasting value. Books introduce us to the best society; they bring us into the presence of the greatest mind that have ever lived, we hear what they said and did; we see them as if they were really alive, we sympathize with them, enjoy with them and grieve with them.

67. According to the passage, books live forever because –
 (a) They have productive value
 (b) Time does not destroy great thoughts
 (c) They are in printed form
 (d) They have the power to influence people
68. According to the passage, temples, pictures and statues belong to the same category because –
 (a) All of them are beautiful
 (b) All of them are substantial
 (c) All of them are likely to decay
 (d) All of them are fashioned by men
69. Books introduce us into the best society as –

- (a) They give us a glimpse of the greatest minds
 (b) They take us to the world of imagination
 (c) They instill in us the qualities of the greatest minds
 (d) They introduce us to elite class of the society

70. Radha, "I won't buy a new car". (Choose the correct word to fill in the blank.)

- (a) won't (b) will
(c) wouldn't (d) would

71. They will ask you a lot of questions at the interview. The sentence, when converted into the passive voice, would read as –

- (a) You are asked a lot of questions at the interview
 (b) You were being asked a lot of questions at the interview
 (c) You will be asked a lot of questions at the interview
 (d) You are being asked a lot of questions at the interview

72. The phrase **in cold blood** means –

- (a) Indifferently (b) Cruelly
(c) Thoughtlessly (d) Deliberately

73. The workers went out of the factory.....to hold a protest rally. (Choose the correct word to fill in the blank.)

- (a) en masse (b) en route
(c) impasse (d) de facto

74. **To put up with** means –

- (a) to close (b) to prolong
(c) to tolerate (d) to forget

75. Fill in the blank with a possessive pronoun chosen from those given below: Mani declared that the books was not

- _____ (a) our (b) her

- (c) your (d) hers

Section - C (General Science)

76. Rhizobium bacteria –
 (a) Help in digestion
 (b) Help in nitrogen fixation
 (c) Cause diseases
 (d) All of the above
77. The metal which is stored in kerosene –
 (a) Phosphorus (b) Magnesium
 (c) Sodium (d) Calcium
78. Poor conductors are –
 (a) Plastics (b) Clothes
 (c) Wood (d) All of these
79. There are following zones of a flame –
 (a) Two (b) Three
 (c) Four (d) No any zone
80. Force of friction always acts on moving objects and its direction shall be –
 (a) On any direction
 (b) Along the direction of motion
 (c) Perpendicular to the direction of motion
 (d) Opposite to the direction of motion
81. The stage of the embryo in which all the body parts can be identified is-
 (a) Fetus (b) Zygote
 (c) Infant (d) None
82. Diabetes is due to the malfunctioning of –
 (a) Adrenal gland
 (b) Pituitary gland
 (c) Heart
 (d) Pancreas
83. Naphthalene balls are obtained from –
 (a) Carbon (b) Coke
 (c) Coal tar (d) Coal gas
84. John accidentally placed his hand over a flame and immediately pulled it back. He felt the sensation of heat and reacted due to the action of-
 (a) Nerve cells
 (b) Blood cells
 (c) Skin surface
 (d) Nucleus of cell
85. A purple coloured non-metal forms a brown solution in alcohol which is applied on wounds as an antiseptic. Name of the non-metal is –
 (a) Phosphorous (b) Carbon
 (c) Sulphur (d) Iodine
86. Given below are the harmful effects of weeds on crop plants. Choose the correct combination of statements –
 (i) They interfere in harvesting
 (ii) They help crop plants to grow healthy
 (iii) They compete with crop plants for water, nutrients, space and light
 (iv) They affect plant growth.
 (a) (i), (iii), (iv)
 (b) (iii), (iv)
 (c) (iii) only
 (d) (i), (ii), (iii), (iv)
87. Which of the following groups contain all synthetic substance?
 (a) Nylon, Terylene, Wool
 (b) PVC, Polythene, Bakelite
 (c) Cotton, Polycot, Rayon
 (d) Acrylic, Silk, Wool
88. Which of the following statement is true about endemic species?
 (a) They are found exclusively in a specific habitat
 (b) Endemic species can never become endangered
 (c) They are only found in zoos and botanical gardens
 (d) They are not affected by the destruction of their habitat

89. Identify the correct statement about cells –
- (a) All the cells have nucleus
 - (b) Cells of an organ have similar structure
 - (c) Cells of a tissue have similar structure
 - (d) Shape of all types of cells is round
90. Aquatic animals in which fertilization occurs in water are said to be –
- (a) Viviparous with fertilization
 - (b) Oviparous with external fertilization
 - (c) Viviparous with internal fertilization
 - (d) Oviparous with internal fertilization
91. The light from sun takes 500 sec to reach the earth. Assuming that the speed of light is $3,00,000 \text{ kms}^{-1}$, calculate the distance between the sun and the earth –
- (a) 100 million km
 - (b) 150 million km
 - (c) 1500 million km
 - (d) 15 million km
92. Which of the following is not an application of chemical effect of electric current?
- (a) Electroplating of metals
 - (b) Purification of metals
 - (c) Decomposition of elements
 - (d) Decomposition of compounds
93. An earthquake of magnitude '6' on Richter scale has –
- (a) Ten times more destructive energy than an earthquake of magnitude '4'
 - (b) Hundred times more destructive energy than an earthquake of magnitude '4'
 - (c) Thousand times more destructive energy than an earthquake of magnitude '4'
 - (d) One and half times more destructive energy than an earthquake of magnitude '4'
94. Which of the following statements is correct regarding rods and cones in human eye?
- (a) Cones are sensitive to dim light
 - (b) Cones are sensitive to bright light
 - (c) Rods are sensitive to bright light
 - (d) Rods can sense colour
95. Suppose a new planet is discovered between Uranus and Neptune, its time period of revolution around the sun would be –
- (a) Less than that of Neptune
 - (b) More than that of Neptune
 - (c) Equal to that of Neptune or Uranus
 - (d) Less than that of Uranus
96. Ramesh was cooking potato curry on a chulha. To his surprise he observed that the copper vessel was getting blackened from outside. It may be due to –
- (a) Proper combustion of fuel
 - (b) Improper cooking of potato curry
 - (c) Improper combustion of the fuel
 - (d) Burning of copper vessel
97. When a copper vessel is exposed to moist air for long, it acquires a dull green coating. The green material is a mixture of –
- (a) Copper oxide and Copper carbonate
 - (b) Copper hydroxide and Copper carbonate
 - (c) Copper oxide and Copper nitrate
 - (d) Copper hydroxide and Copper nitrate

98. The places mean for conservation of biodiversity in their natural habitat are –

- (i) Zoological garden
- (ii) Botanical garden
- (iii) Sanctuary
- (iv) National Park

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

99. The same force 'F' acts on four different objects having the areas given below, one by one. In which case the pressure exerted will be the maximum?

- (a) 20 m²
- (b) 50 m²
- (c) 100 m²
- (d) 10 m²

100. Before playing the orchestra in a musical concert, a sitarist tries to adjust the tension and pluck the strings suitably. By doing so he is adjusting –

- (a) Intensity of sound only
- (b) Amplitude of sound only
- (c) Frequency of the sitar string with the frequency of other musical instruments.
- (d) Loudness of sound

Section - D (Social Science)

101. The Chairman of the Drafting Committee of India Constitution was –

- (a) Sardar Patel
- (b) Dr. B.R. Ambedkar
- (c) Dr. Rajendra Prasad
- (d) J.L. Nehru

102. By the late of 18th Century East India Company was trying to expand the cultivation of –

- (a) Opium
- (b) Indigo
- (c) Cotton
- (d) Tea

103. EVMs were used for the first time in the general elections.

- (a) 2001
- (b) 2002

- (c) 2003
- (d) 2004

104. There areelected members in Rajya Sabha.

- (a) 543
- (b) 272
- (c) 233
- (d) 260

105. Minerals that lie at shallow depths are taken out by removing the surface layer, this is known as –

- (a) Open-cast mining
- (b) Shaft mining
- (c) Drilling
- (d) All of the above

106. The complainant has a right to get a free copy of the FIR from the Police.

- (a) Fundamental
- (b) Legal
- (c) Political
- (d) Economic

107. Which article of the Constitution states that **Untouchability** has been abolished?

- (a) Article 14
- (b) Article 15
- (c) Article 16
- (d) Article 17

108. The Marathi newspaper **Kesari** was edited by –

- (a) Bipin Chandrapal
- (b) Bal Gangadhar Tilak
- (c) Sarojini Naidu
- (d) Lala Lajpat Rai

109. The difference between the birth rate and the death rate is called the –

- (a) Natural growth rate
- (b) Normal growth rate
- (c) Actual growth rate
- (d) None of these

110. Dandi March was against the –

- (a) Salt Tax
- (b) Purna Swaraj
- (c) Non Co-operation Movement
- (d) Simon Commission

111. The British East India Company got a charter from Queen Elizabeth-I in –

- (a) 1600 AD (b) 1599 AD (a) 8 (b) 6
(c) 1601 AD (d) 1700 AD (c) 4 (d) 2
- 112.** Delhi Renaissance refers to the period from –
(a) 1830 – 1857 AD
(b) 1857 – 1885 AD
(c) 1825 – 1857 AD
(d) None of these
- 113.** Woods Dispatch of 1854 refers to –
(a) Educational Reform
(b) Financial Reform
(c) Forest Reform
(d) None of these
- 114.** The leader of the ruling party in Lok Sabha is –
(a) The Prime Minister
(b) The President
(c) The Vice President
(d) The Leader of Opposition
- 115.** As per which article of the Indian Constitution every arrested person is guaranteed Fundamental Rights-
(a) Article 20 (b) Article 21
(c) Article 23 (d) Article 22
- 116.** Which of the following gas was released in Bhopal Gas Tragedy?
(a) Methyl Isocyanite
(b) Ethyl Isocyanate
(c) Methyl Alcohol
(d) Ethyl Alcohol
- 117.** Which one of the following is a leading producer of Copper in the world?
(a) Bolivia (b) Chile
(c) Ghana (d) Zimbabwe
- 118.** Identify the state with “Lowest literacy” as per census 2011-
(a) Bihar (b) Haryana
(c) Rajasthan (d) Gujarat
- 119.** The total number of Anglo Indians nominated to the Lok Sabha is –
- 120.** Which one of the following countries has the highest percentage of forest land?
(a) Australia (b) India
(c) France (d) Japan
- 121.** Who was the founder of the ‘Brahmo Sabha’?
(a) Annie Besant
(b) Bala Gangadhar Tilak
(c) Raja Ram Mohan Roy
(d) Eswar Chandra Vidyasagar
- 122.** Child marriage restraint Act was passed in the year
(a) 1829 (b) 1909
(c) 1919 (d) 1853
- 123.** What is a population pyramid?
(a) A graphical presentation of the age, sex composition of a population
(b) When the population density of an area is so high that people live in tall buildings
(c) Pattern of population distribution in large urban areas
(d) Pattern of population distribution in rural areas
- 124.** Which age group of India is guaranteed free education by the Constitution?
(a) 6 – 14 years (b) 5 -13 years
(c) 7 – 14 years (d) 6 – 12 years
- 125.** Who wrote the book ‘Poverty and Unbritish Rule in India’?
(a) Dadabhai Nauroji
(b) Badruddin Tyabji
(c) Pherojshah Mehta
(d) Bipin Chandrapal

Paper - II (Intelligence Test)

Directions (126 - 128): Choose the letters group that best represents a relationship

similar to the one expressed in the original pair of letters group:

126. MONKEY : XDJMNL :: TIGER : ?

- (a) QDFHS (b) SDFHS
(c) SHFDQ (d) UJHFS

127. MAD is to JXA as RUN is to –

- (a) ORX (b) OSQ
(c) PRJ (d) UXQ

128. Kilometer is to Distance as Poundal is to –

- (a) Density (b) Acceleration
(c) Momentum (d) Force

Directions- (129 and 130): Which number completes the second pair in the same way as the first pair?

129. 20 : 11 :: 102 : ?

- (a) 49 (b) 52
(c) 61 (d) 98

130. 13 : 25 :: 48 : ?

- (a) 95 (b) 97
(c) 109 (d) 105

131. Tiff is to Battle as Frugal is to –

- (a) Sprint (b) Vague
(c) Miserly (d) Vital

132. A is 40 m South-West of B. C is 40 m South-East to B. Then C is in which direction of A?

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

133. Choose the figure, which is different from others-

A	E	Z	N
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(1) (2) (3) (4)

- (a) 1 (b) 2
(c) 3 (d) 4

134. If ENGLAND is written as 1234526 and FRANCE is written as 785291. How is GREECE coded?

- (a) 381171 (b) 831191
(c) 832252 (d) 835545

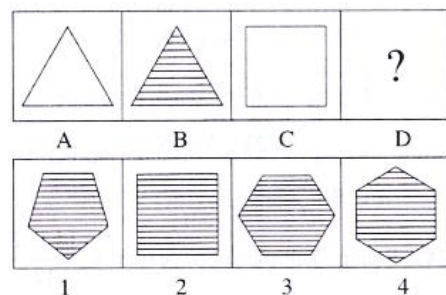
135. Which word can't be formed by using the letters of the word INTELLIGENCE?

- (a) TILLAGE (b) INCITE
(c) GENTLE (d) NEGLECT

136. If + means divide, divide means '–', '–' means '×', '×' means '+' then $12 + 6/3 - 2 \times 8 = ?$

- (a) 2 (b) 4
(c) 8 (d) 5

137. Select the figure from the answer set that would come in place of the question mark (?)



- (a) 1 (b) 2
(c) 3 (d) 4

138. A cube painted blue on all the faces is cut into 125 cubes of equal size. Then, how many cubes are not painted on any face?

- (a) 8 (b) 16
(c) 27 (d) 54

139. If 1st October is Sunday, then 1st November will be –

- (a) Tuesday (b) Friday
(c) Wednesday (d) Thursday

140. Find the missing number in the box

0	3	8
15	24	35
48	?	80

- (a) 64 (b) 63
(c) 66 (d) 84

141. Which one set of letters when sequentially placed at the gaps in the given letter series shall complete it: ac_cab_baca_aba_aca_

- (a) acbcc (b) aacbc
(c) babbb (d) bcbba

Direction (142 - 145): In each of the following questions. Find the word which cannot be made from the letters of the given word.

142. REPUBLICAN

- (a) CLIP (b) PURE
(c) ANKLE (d) BANE

143. ESTRANGE

- (a) GENERATE (b) SERGEANT
(c) REAGENTS (d) GREAT

144. ADMINISTRATOR

- (a) ADMIT (b) NEST
(c) MANTA (d) ROAD

145. SOCIALISATION

- (a) SCOUT (b) CLASS
(c) LIAISON
(d) ASSOCIATION

146. If LONDON is coded as MPOEPO.

What code is needed for DELHI?

- (a) DEHLI (b) EFIMJ
(c) HLDEI (d) EFMIJ

147. Choose the letters group that best represents a relationship similar to the one expressed in the original pair of letters groups: PNS : OOT :: DBH : ?

- (a) PPI (b) BBI
(c) CCI (d) DDB

Directions (148 - 150): In the given series, find the next/missing term/number.

148. MNOABCPQRDEFST??

- (a) GK (b) UV
(b) GH (d) UG

149. AZ, CX, EV, ?

- (a) HT (b) HU
(c) GS (d) GT

150. YX, UTS, ONML, ?

- (a) FEDCB (b) GFEDC
(c) IHGFE (d) HGFED

Hints and Solutions

1. (d)

2. (a) Time period is taken twice when interest is calculated half yearly.

3. (d) If a number is doubled then its cube is eight times the cube of the given number.

4. (d) Cube root of $\left(-\frac{64}{243}\right) = -\frac{4}{7}$

5. (b) $\left[\left(\frac{1}{2}\right)^{-1} + \left(\frac{2}{3}\right)^2 - \left(\frac{3}{4}\right)^0\right]^{-2}$
 $= \left[2 + \frac{4}{9} - 1\right]^{-2}$

$$= \left[\frac{18+4-9}{9}\right]^{-2}$$

$$= \left[\frac{13}{9}\right]^{-2}$$

$$= \left(\frac{9}{13}\right)^2 = \frac{81}{169}$$

6. (b) $x^3 - 225x = x(x^2 - 225)$

$$= x[(x)^2 - (15)^2]$$

$$= x(x + 15)(x - 15)$$

7. (a) The point (-3, 2) and (2, -3) represent different points.

8. (a) Area of four walls = $2h(l + b)$

9. (a) 1 X 2 Y 6 Z

$$\begin{matrix} \downarrow & \downarrow & \downarrow \\ 0 & 0 & 0 \end{matrix}$$

= 102060 (which is completely divisible by 9).

10. (a)

11. (b) Let the higher limit is x and lower limit is y , then as per question.

$$x - y = 10 \quad \dots(1)$$

$$x + y = 42 \times 2$$

$$x + y = 84 \quad \dots(2)$$

On solving, $x = 47, y = 37$

12. (c) Speed = $54 \frac{1}{2} = \frac{109}{2}$ km

$$\text{Time} = \frac{7}{2} + \frac{35}{2 \times 60} = \frac{455}{120} \text{ hours}$$

$$\begin{aligned} \therefore \text{Distance} &= \frac{109}{2} \times \frac{455}{120} \\ &= \frac{9919}{48} \text{ km} \end{aligned}$$

13. (b) Let the present age of A is $5x$ and present age of B is $7x$, then as per question,

$$\frac{5x+4}{7x+4} = \frac{3}{4}$$

$$20x + 16 = 21x + 12$$

$$x = 4$$

\therefore Present age of B = $7 \times 4 = 28$ years

14. (d) Let the first part of 36 is x and the second part is $(36 - x)$, then as per question,

$$5x + 3(36 - x) = 142$$

$$2x = 142 - 108$$

$$x = \frac{34}{2}$$

$$x = 17 \quad (\text{First part})$$

$$\text{Second part} = 36 - 17 = 19$$

15. (d) Let the smaller part is Rs. x and the larger part is Rs. $(1500 - x)$ rupees then as per question,

$$x \times \frac{10}{100} - (1500 - x) \times \frac{8}{100} = 60$$

$$10x - 12000 + 8x = 6000$$

$$18x = 18000$$

$$\therefore x = \text{Rs. } 1000 \text{ (Larger part)}$$

$$\begin{aligned} \therefore \text{Smaller part} &= 1500 - 1000 \\ &= \text{Rs. } 500 \end{aligned}$$

16. (c) $x + y + z = 360^\circ$

17. (d) Number of sides = $\frac{360}{12} = 30$

18. (b) $44 = 2 \times 2 \times \underline{11}$

$$\text{Required number} = 11$$

19. (a) Required number = $\sqrt{12321}$
= 111

20. (d) Required number of cubical

$$\begin{aligned} \text{boxes} &= \frac{(2.5)^3 \times (100)^3}{15625} \\ &= \frac{15625000}{1562.5} \\ &= 1000 \end{aligned}$$

21. (d) $\left(a - \frac{1}{a}\right)^2 = a^2 + \frac{1}{a^2} - 2$
= $27 - 2 = 25$

$$\therefore a - \frac{1}{a} = \pm 5$$

22. (a) Required altitude of trapezium

$$= \frac{14 \cdot 1 \times 2}{12} = 2.35 \text{ cm}$$

23. (b) $l = 4.2 \text{ m}$

$$b = 3 \text{ m}$$

$$h = 1.1 \text{ m}$$

$$\text{Volume} = l \times b \times h$$

$$= 4.2 \times 3 \times 1.1$$

$$= 13.86 \text{ m}^3$$

$$= 13860 \text{ litres}$$

24. (a) $r = \frac{84}{2}$

$$r = 42 \text{ cm}$$

$$h = 350 \text{ cm}$$

$$\text{Required area} = 2 \times \frac{22}{7} \times 42 \times 350 \times 500$$

$$= 46200000 \text{ sq. cm}$$

$$= 4620 \text{ sq. m}$$

25. (c)

26. (b)

27. (d) $5^{3x+4} = 5^2 \times 5^{4x-1}$

$$5^{3x+4} = 5^{2+4x-1}$$

$$3x + 4 = 4x + 1$$

$$x = 3$$

$$= 4ab \times 6b^2$$

$$= 24ab^3$$

28. (b) Let the two digits number is $(10x + y)$ and changing the digits it becomes $(10y + x)$ then as per question,

$$x + y = 9 \quad \dots(1)$$

$$10x + y - 9 = 10y + x$$

$$9x - 9y = 9$$

$$x - 1 = 1 \quad \dots(2)$$

On solving equation (1) and (2),

$$x = 5, y = 4$$

$$\begin{aligned} \therefore \text{Required number} &= 10 \times 5 + 4 \\ &= 50 + 4 \\ &= 54 \end{aligned}$$

29. (a) $A = 2, B = 4, C = 0, D = 0, E = 2, F = 9, G = 6$

30. (b) Required probability $= \frac{4}{52} + \frac{2}{52}$
 $= \frac{6}{52} = \frac{3}{26}$

31. (a)

32. (d) Amount $= 5000 \times \frac{104}{100} \times \frac{103}{100} \times \frac{102}{100}$
 $= \text{Rs. } 5463 \cdot 12$

Compound Interest $= \text{Rs. } 5463 \cdot 12 - 5000$
 $= \text{Rs. } 463 \cdot 12$

33. (b) Required number $= 360 \times 5 \times 2$
 $= 3600$

34. (d) Let the number is x , then as per question

$$x \times \frac{25}{100} = 650 \times \frac{18}{100} - 19$$

$$\frac{x}{4} = 9 \times 13 - 19$$

$$\frac{x}{4} = 117 - 19$$

$$x = 98 \times 4$$

$$x = 392$$

35. (a) Let the selling price = Rs. 100

$$\text{Cost price} = \text{Rs. } 25$$

$$\text{Profit} = 100 - 25 = \text{Rs. } 75$$

$$\text{Profit \%} = \frac{75}{25} \times 100\%$$

$$= 300\%$$

36. (c) Required area of rectangle

37. (a) Required area $= \pi r(l + r)$
 $= \frac{22}{7} \times 12(9 + 12)$
 $= \frac{22}{7} \times 12 \times 21$
 $= \frac{5544}{7}$
 $= 792 \text{ dcm}^2$

38. (b) Volume of cube $= (4)^3$
 $= 64 \text{ cm}^3$

$$\text{Radius} = 2 \text{ cm}$$

$$\begin{aligned} \text{Volume of sphere} &= \frac{4}{3} \pi r^3 \\ &= \frac{4}{3} \times \frac{22}{7} \times 8 \\ &= 33 \cdot 52 \text{ cm}^3 \end{aligned}$$

$$\begin{aligned} \text{Required volume} &= 64 - 33 \cdot 52 \\ &= 30 \cdot 48 \text{ cm}^2 \end{aligned}$$

39. (c) Radius of circle $= \sqrt{3^2 + 4^2}$
 $= \sqrt{25} = 5 \text{ cm}$

40. (a) Correct mean $= \frac{40 \times 160 + 165 - 125}{40}$
 $= \frac{6400 + 40}{40}$
 $= \frac{6440}{40} = 161$

41. (a) $x^3 + y^3 = (x + y)^3 - 3xy(x + y)$
 $= (12)^3 - 3 \times 27 \times 12$
 $= 1728 - 972$

$$\begin{aligned} &= 756 \\ \text{42. (d) } T &= \frac{(n-1)}{R} \times 100 \\ &= \frac{(2-1) \times 4}{25} \times 100 \\ &= 16 \text{ years} \end{aligned}$$

43. (d) Area of $\Delta BED = \frac{1}{4} \times \text{Area of } \Delta ABC$

44. (a) Required ratio $= 4\pi r_1^2 : 4\pi r_2^2$
 $= 7^2 : 14^2$
 $= 1 : 4$

45. (b) Required ratio of areas $= 5 : 6$

46. (b) Required profit $= 10 \times 600 \times \frac{16}{100}$
 $= \text{Rs. } 960$

47. (a) Volume of ball $= \frac{4}{3} \times \frac{22}{7} \times 7 \times 7 \times 7$

$$= \frac{4312}{3} \text{ cm}^3$$

Volume of cylindrical wire h

$$= \frac{4312 \times 7}{22 \times 3 \times 0.1 \times 0.1}$$

$$= 45733.33 \text{ cm}$$

Length of wire = 457.33 m

48. (a) Required area = $\frac{1}{4} \times \frac{22}{7} \times 21 \times 21$
 = 346.5 m²

49. (a) Speed of stream = 1.5 km/hour

50. (c) (10001)² = 100020001

51.(c)	52.(d)	53.(d)	54.(a)	55.(c)
56.(c)	57.(d)	58.(b)	59.(a)	60.(d)
61.(d)	62.(d)	63.(d)	64.(d)	65.(c)
66.(b)	67.(b)	68.(c)	69.(a)	70.(c)
71.(c)	72.(b)	73.(a)	74.(b)	75.(d)

76. (b) The '*Rhizobium bacterias*' are found in the root-nodules to legume crops. e.g., Gram, Pea, Urd, Mung, Lobia and Green Manure crops - Sanai, Dhaincha etc., which of the helps in nitrogen fixation from 78.4% free atmospheric nitrogen.

77. (c) Sodium is a soft metal and highly reactive. It reacts strongly with water and gives out hydrogen. It does not react with kerosene. Hence, it is stored and conserved in kerosene.

78. (d) Wood, plastics and clothes are non-conductor of heat and electricity.

79. (b) Normally, a flame has following three zones: (a) Dark zone, (b) Luminous zone, (c) Non-luminous zone.

80. (d) Friction is a force that resists the motion of one surface relative to another with which it is in contact. This force opposes the relative motion of two surface in contact. This force acts in opposite direction of the motion.

81. (a) In the stage of 'Foetus' of the embryo, all the body parts can be identified.

82. (d) In human, Diabetets disease is due to malfunctioning of pancreas, because in its enough Insulin is not found. In food, the sugar cannot be digested due to lack of Insulin. Resulting, man feels weakness. The treatment of this disease in Insulin injection, which was discovered by the Scientist F. Batting in the year 1932.

83. (c) Napthalene is obtained by distillation of coaltar.

84. (c) Due to the sensation and reaction of heat to the skin-surface, John pulled back his hand.

85. (d) Iodine is a member of halogen family. It is placed in group VII of periodic table. It is soluble in alcohol and this solution is used as an antiseptic cream and applied on wounds.

86. (a) The harmful effects of weeds, e.g., Phalaris minor (Genhu ka Mama), Parthenium (Gajar ghas), Jangli Jayee, Bathua, Khartua, Krishna Neel etc. on crop plants are : they interfere in harvesting; they compete with crop plants for water, nutrients, space and light as well they affects the plant growth etc.

87. (b) Polythene, PVC and Bakelite are synthetics.

88. (a) Endemic species are found exclusively in specific habitat.

89. (a) Nucleus is an essential part of cell structure.

90. (b) There are certain aquatic animals in which external fertilization occurs in water. These animals are called 'oviparous with external fertilization.'

91. (b) Distance between the Earth and the Sun

$$= 300000 \times 500 \text{ kms}$$

= 150000000 kms

= 150 million kms

92. (d)

93. (d) Intensity of energy, released by the earthquake, is measured on Richter scale. This scale of measurement was developed by Charles Richter in 1935.

94. (b) Cones work only in bright light and provide colour sensitivity which creates the conception of colour. Cones are less sensitive to light than the rods.

95. (a) Period of rotation of the Neptune around the Sun is 165 years and that of Uranus is 84 years. Newly discovered planet rotated between the Neptune and the Uranus. Hence, its period of rotation will be more than that of Uranus and less than Neptune.

96. (c) When the combustion of fuel is improper, the smoke comes out which blackens the pot from outside.

97. (b) A copper vessel acquires a dull green coating when exposed to moist air for long. This green material is a mixture of copper carbonate and copper hydroxide.

98. (c)

99. (a) Formula : $P = \frac{F}{A}$
 \Rightarrow Pressure = $\frac{\text{Force}}{\text{Surface area}}$

As obvious from the formula that the pressure is inversely proportional to the surface area, *i.e.*, pressure rises when the surface area decreases.

100. (c) Before the musical concert starts, a sitarist adjusts the tension of the string suitably to adjust the frequency of the sitar string with the frequency of other musical instruments.

101. (b)

102. (b)

103. (a) EVMs were used first time in 2001 Assembly general election.

104. (c)

105. (a)

106. (b)

107. (d)

108. (b) Bal Gangadhar Tilak edited the Marathi Newspaper Kesari in 1881.

109. (a)

110. (a) Dandi March was against the Salt tax.

111. (a)

112. (a)

113. (a) Wood Despatch in 1854 refers to Educational Reforms which were sent by Wood to Lord Dalhousie.

114. (a)

115. (b)

116. (a)

117. (b)

118. (a) As per 2011 Census of India, the lowest literacy rate was in Bihar (61%).

119. (d)

120. (b) Highest percentage of forest land is found in India (24.38%).

121. (c) Brahma Sabha was founded by Raja Ram Mohan Rai and Devendra Nath Tagore in Calcutta in 1828.

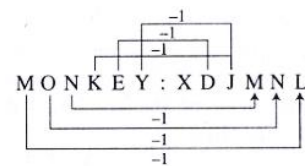
122. (a) Child marriage restraint was passed in September 28, 1929.

123. (a)

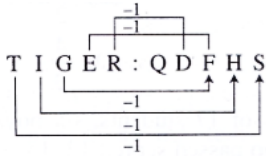
124. (a)

125. (a)

126. (a) As,



Similarly,



127. () As, M A D

-3↓ -3↓ -3↓

J X A

Similarly, R U N

-3↓ -3↓ -3↓

O R K

128. (d) As, kilometer is the unit of Distance,
similarly, Poundal is the unit of Force.

129. (b) ∴ $20 \div 2 + 1 = 11$

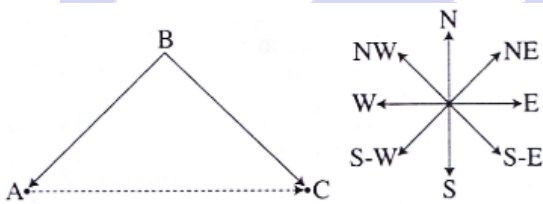
∴ $120 \div 2 + 1 = 52$

130. (a) ∴ $13 \times 2 - 1 = 26 - 1 = 25$

∴ $48 \times 2 - 1 = 96 - 1 = 95$

131. (c)

132. (a)



133. (a) Rest are equals in length of its sides.

134. (*)

G R E E C E
↓ ↓ ↓ ↓ ↓ ↓
⑤ ⑧ ① ① ⑨ ①
Makers...Building Nation...

135. (a)

136. (b) $? = 12 \div 6 - 3 \times 2 + 8$

$= 2 - 3 \times 2 + 8$

$= 10 - 6 = 4$

137. (b)

138. (c)

139. (c) Ist November, it will be Wednesday.

140. (b) Missing number (?) = 63

141. (b) acac/abab/acac/abab/acac

142. (c) Letter 'K' is not in the given word.

143. (a)

144. (b) Letter 'E' is not in the given word.

145. (a) Letter 'U' is not in the given word.

146. (d)

147. (c)

148. (d)

149. (d)

150. (b) Pairs of opposite letters