

**DO NOT BREAK THE SEAL OF THE BOOKLET UNTIL YOU ARE TOLD TO DO SO**

## QUESTION BOOKLET

**SERIES I**

**Subjects : General Intelligence, General Awareness, General English & Mathematics**

**BOOKLET SERIAL NO.**

**257**

**Marks : 300**

**Time : 2½ hours**

Read the following instructions carefully before you  
begin to answer the questions.

### INSTRUCTIONS TO CANDIDATES

1. This booklet contains **150 questions** to be answered in a separate OMR Answer Sheet using **Black Ball Pen** in following four parts:

**Part-A- General Intelligence : 25 questions, Part-B- General Awareness : 25 questions,**

**Part-C-General English : 50 questions, Part-D-Mathematics : 50 questions**

2. All Questions are compulsory.
3. You will be supplied the Answer sheet separately by the invigilator. You must complete the details of particulars asked for.
4. Answers must be shown by completely blackening the corresponding circles in the Answer Sheet against the relevant question number by **Black Ball Pen**. OMR Answer Sheet without marking series/double series marking shall not be evaluated.

**Example :**

Supposing the following question is asked :-

**The Capital of Meghalaya is-**

- A. Guwahati
- B. Kohima
- C. Shillong
- D. Delhi

You will have four alternatives in the Answer Sheet for your response corresponding to each question of the Question Booklet as below :-

(A) (B) (C) (D)

In the above illustration, if your chosen response is alternative C i.e. Shillong, then the same should be marked on the Answer Sheet by blackening the relevant circle with a **Black Ball Point Pen** only as below :-

(A) (B) (●) (D)

### WHICH IS THE ONLY CORRECT METHOD OF ANSWERING

5. Answer the questions as quickly and as carefully as you can. Some questions may be difficult and others easy. Do not spend too much time on any one question.
6. There will NOT be any negative marking for wrong answers.
7. The Answer Sheet must be handed over to the invigilator before you leave the Examination Hall.
8. No rough work is to be done on the Answer Sheet. Space for rough work has been provided in the question booklet.

## **PART - A - GENERAL INTELLIGENCE**

**Marks : 50**

**Each question carries 2 marks :**

1. In a certain language CANDOUR is written as NACDRUO, then how is ABREAST written in that code ?

- a) RBAETSA                      b) TSABERA
- c) ASTARBE                     d) BAREATS

2. What will come in place of question mark (?)  
15, 20, 30, ?, 65

- a) 40                                b) 45
- c) 50                                d) 60

3. If D is the daughter of A, D is the sister of M and C is the brother of A, how are C and M related ?

- a) Mother and Daughter
- b) Father and Daughter
- c) Uncle and Niece
- d) Aunt and Niece

4. Mahesh started from point X and walked straight 5 km west, then turned left and walked straight 2 km and again turned left and walked straight 7 km. In which direction is he from point X ?

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

5. In a certain code EDUCATION is written as DECUTAOIN, then COLLEGE will be written as

- a) OCLLGEE                      b) COELLEG
- c) OCLGEEL                      d) EOLCGLE

6. Tarun 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 West
- c) 17 km East                      d) 20 km North

7. Five persons are living in a multistoried building. Mr. 'E' lives in a flat above Mr. 'A', Mr. 'C' lives in a flat below Mr. 'D' and Mr. 'A' live in a flat above Mr. 'D' and Mr. 'B' lives in a flat below Mr. 'C'. Who lives in the topmost flat ?

- a) Mr. 'B'                              b) Mr. 'C'
- c) Mr. 'D'                              d) Mr. 'E'

8. If A's father is B, C is the father of B and D is A's mother, then how is C related to D ?

- a) Father                              b) Grandfather
- c) Father-in-law                      d) Uncle

9. Six friends are sitting in a circle and playing cards. K is to the left of D. M is in-between B and J. R is in-between K and B. Who is sitting to the right of M ?

- a) D                                      b) J
- c) K                                      d) B

10. Pointing to a person, Raju said, 'He is the only brother of my father's mother's daughter.' How is the person related to Raju ?

- a) Father                              b) Uncle
- c) Nephew                              d) Brother

11. Find the odd one out in this series of numbers : 13, 23, 33, 43, 53

- a) 23                                      b) 33
- c) 43                                      d) 53

12. If 1<sup>st</sup> January, 1992 is Tuesday, then on which day of the week will 1<sup>st</sup> January, 1993 fall ?

- a) Wednesday                      b) Thursday
- c) Friday                              d) Saturday

13. A rule states that, in order to drink beer, one must be over 18 years old. In a bar, there are 4 people, P is 16 years old, Q is 25 years old, R is drinking milkshake and S is drinking a beer. What must be checked to ensure that the rule is being followed ?

- a) Only P's drink
- b) Only P's drink and S's age
- c) Only S's age
- d) Only P's drink, Q's drink and S's age

14. Find the next term in the sequence : 7G, 11K, 13M, \_\_\_\_.

- a) 17Q                                      b) 15Q
- c) 17P                                      d) 15P



15. Mini is to the right of Rajni but to the left of Amit. Saya is to the right of Mini but to the left of Jaya. Who is on the extreme left if all the girls are facing North ?

- a) Jaya                                      b) Mini
- c) Rajni                                      d) Saya

16. A person walks towards East and then towards South. After walking some distance, he turns towards West and then turns to his left. In which direction is he walking now ?

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

17. At what time between 6 am and 7 am, will the minute hand and hour hand of a clock make an angle closest to  $60^\circ$

- a) 6.22 am                                      b) 6.27 am
- c) 6.38 am                                      d) 6.45 am

18. Rahul, Murali, Srinivas and Amit are seated around a square table. Rahul is sitting to the left of Murali. Srinivas is sitting to the right of Amit. Which of the following pairs are seated opposite each other ?

- a) Rahul and Murali
- b) Srinivas and Amit
- c) Srinivas and Murali
- d) Srinivas and Rahul

19. Find the missing sequence in the letter series below : A, CD, GHI, ?, UVWXY

- a) LMN                                        b) MNO
- c) MNOP                                      d) NOPQ

20. There are eight bags of rice looking alike, seven of which have equal weight and one is slightly heavier. The weighing balance is of unlimited capacity. Using this balance, the minimum number of weightings required to identify the heavier bag is

- a) 2    b) 3
- c) 4    d) 8

21. A man is running at the speed of 18 km/hour crosses a platform 300 metres long. The time taken in crossing the platform is

- a) 4 minutes                                      b) 3 minutes
- c) 2 minutes                                      d) 1 minute

22. A certain number of men can do a work in 60 days. If there were 8 men more it could be

finished in 10 days less, calculate the number of men.

- a) 50    b) 40
- c) 30    d) 20

23. Cost price of 30 mangoes is equal to the selling of 24 mangoes. Calculate the percentage of gain.

- a) 25%    b) 30%
- c) 40%    d) 10%

24. If the wages of 45 women amount to Rs.15525 in 48 days, how many men must work 16 days to receive Rs.5750. The daily wages of a man being double that of woman ?

- a) 20 men    b) 25 men
- c) 15 men    d) 10 men

25. The population of a city 10,000. If the increase in the number of males is 4% and that of the female by 6%, in a particular year and population becomes 10,480. The number of females in the town is

- a) 4500    b) 5000
- c) 6000    d) 4000

## **PART - B -GENERAL AWARENESS**

**Marks : 50**

**Each question carries 2 marks :**

**26.** Which one is the smallest ocean in the world?

- a) Indian                      b) Pacific
- c) Atlantic                    d) Arctic

**27.** Which one is the biggest island in the world?

- a) Borneo                      b) Finland
- c) Sumatra                    d) Greenland

**28.** National Youth Day is celebrated on

- a) 12<sup>th</sup> January              b) 10<sup>th</sup> January
- c) 11<sup>th</sup> January              d) 7<sup>th</sup> January

**29.** India's highest Meteorological Centre (MC) of the Indian Meteorological Department (IMD) is in

- a) Arunachal Pradesh
- b) Ladakh
- c) Sikkim
- d) Jammu and Kashmir

**30.** Which one is the first country to approve Covid-19 vaccine of Oxford-Astra Zeneca ?

- a) USA                          b) India
- c) England                    d) Japan

**31.** In February 2021 Prime Minister inaugurated which Centenary celebration ?

- a) Jalianwala Bagh Centenary Celebration
- b) Non-Cooperation Movement Centenary Celebration
- c) Champaran Centenary Celebration
- d) Chauri Chaura Centenary Celebration

**32.** How many bones are there in the average human skeleton ?

- a) 206                          b) 208
- c) 204                          d) 205

**33.** National Sports University is located in which state in India ?

- a) Assam                      b) Manipur
- c) Meghalaya                d) Mizoram

**34.** Woolens keep us warm in winter because they

- a) Produce more warmth
- b) Are good absorbers of heat
- c) Are good conductor of heat
- d) Are poor conductors of heat

**35.** If a body is taken from the earth to the moon what will be its mass and weight ?

- a) Mass and Weight will remain the same
- b) Mass will remain the same but Weight will be one-sixth its weight on earth
- c) Mass will be one-sixth its mass on earth but Weight will remain the same
- d) Mass will remain the same but Weight will be one-third its weight on earth

**36.** Food is cooked faster in a pressure cooker because

- a) Heat cannot escape from the cooker
- b) Steam is hotter than the boiling water
- c) Due to high pressure, the boiling point of water is raised
- d) In the cooker water starts boiling at a lower temperature

**37.** A lunar eclipse occurs when

- a) The sun, the moon and the earth are not in the same line
- b) The moon comes between the sun and the earth
- c) The earth comes between the sun and the moon
- d) The sun comes between the earth and the moon

**38.** To an astronaut, the outer space appears

- a) White                      b) Black
- c) Deep blue                d) Orange

**39.** 'IC' chips for computers are usually made of

- a) Lead                        b) Gold
- c) Chromium                d) Silicon

**40.** Which planet is known as the red planet ?

- a) Uranus                      b) Mars
- c) Venus                        d) Pluto

41. What is the source of electrical energy in an artificial satellite ?

- a) A dynamo
- b) A mini nuclear reactor
- c) A thermopile
- d) Solar cells

42. The most important stimulant in tea leaves is

- a) Brucine
- b) Caffeine
- c) Phenylalanine
- d) Theonine

43. Fertile soil, suitable for growing common crops, is likely to have a pH value of

- a) Three
- b) Four
- c) Six to seven
- d) Nine to ten

44. The bacteria responsible for 'nitrogen fixation' is found in the roots of

- a) Grass
- b) Citrus plants
- c) Neem tree
- d) Leguminous plants

45. Fog is an example of a colloidal system of a

- a) Liquid dispersed in a gas
- b) Gas dispersed in gas
- c) Solid dispersed in gas
- d) Solid dispersed in liquid

46. Duncan Passage is located between

- a) South and Little Andaman
- b) North and South Andaman
- c) North and Little Andaman
- d) Andaman and Nicobar

47. Which one of the following has been added to the list of original Fundamental Rights ?

- a) Right to property
- b) Right to Constitutional Remedies
- c) Right to freedom of Religion
- d) Right to elementary education

48. A member of the council of ministers can hold office without being a state legislature for a maximum period of

- a) Three months
- b) Six months
- c) One year
- d) Two years

49. Under the UN mandate, which of the following organs is responsible for social security?

- a) General Assembly
- b) International Labour Organisation
- c) Economic and Social Council
- d) UNESCO

50. The ultimate source of energy in a hydro-electric power station is

- a) The potential energy of water
- b) The kinetic energy of water
- c) The electro-chemical energy of water
- d) Solar Energy



## **PART - C -GENERAL ENGLISH**

**Marks : 100**

**Each question carries 2 marks :**

**Directions : (Q.No.51-60), In these questions, out of the four alternatives given, choose the one which best expresses the meaning of the underlined word.**

51. Games play a major role in our life and are indispensable.

- a) Eventful                      b) Vital
- c) Trivial                        d) Distinguished

52. Foreign aid is badly needed to ameliorate the effects of the drought.

- a) Impair                        b) Impel
- c) Improve                      d) Enrich

53. Fame in the world of rock and pop is largely ephemeral.

- a) Fleeting                      b) Permanent
- c) Lasting                        d) Growing

54. The narrow streets have a plethora of interesting boutiques and souvenir shops, many showcasing the talents of local artisans.

- a) Dearth                        b) Surfeit
- c) Assembly                      d) Assortment

55. Her antipathy towards her teacher was obvious to everyone in the classroom.

- a) Affinity                        b) Annoyance
- c) Compassion                      d) Aversion

56. The children were having a boisterous game in the playground.

- a) Quiet                        b) Exuberant
- c) Unruly                        d) Gloomy

57. Chris spun fast in a flashy new car.

- a) Gaudy                        b) Hefty
- c) Sober                        d) Fashionable

58. He was always rather inept at sport.

- a) Incompetent                      b) Complacent
- c) Seasoned                        d) Capable

59. There is a paucity of information on the ingredients of many cosmetics.

- a) Abundance                      b) Depth

- c) Need                        d) Scarcity

60. He is an affluent man.

- a) Prosperous                      b) Flawless
- c) Impoverished                      d) Influential

**Directions : (Q.No.61-70), In these questions, out of the four alternatives given, choose the one which is opposite in meaning of the underlined word.**

61. Demonstrators demanded immediate autonomy for their region.

- a) Independence                      b) Restriction
- c) Dictatorship                      d) Sovereignty

62. Parents and teachers need to be cognizant of the nature of their child's dysfunction.

- a) Judicious                        b) Acquainted
- c) Receptive                        d) Ignorant

63. The discovery of penicillin was a very crucial event in the history of medicine.

- a) Critical                        b) Trivial
- c) Useful                        d) Imminent

64. She was very explicit about what she thought was wrong with the plan

- a) Ambiguous                      b) Definite
- c) Pessimistic                      d) Indifferent

65. The vaccination does not necessarily make you completely immune.

- a) Vulnerable                      b) Unstable
- c) Secure                        d) Effective

66. The captain put the insolent soldier on report.

- a) Impertinent                      b) Audacious
- c) Courteous                        d) Nonsensical

67. Within minutes, the jury had concurred that he was guilty.

- a) Concluded                        b) Accepted
- c) Differed                        d) Assumed

68. All pandemonium broke loose outside.

- a) Emotion                        b) Harmony

- c) Tumult                      d) Enthusiasm

69. He cast a genial glance at one of his apprentices.

- a) Cheerful                      b) Congenial  
c) Angry                      d) Unfriendly

70. Marie, being a detective, could not be easily cajoled.

- a) Dissuaded                      b) Flattered  
c) Tempted                      d) Insulted

**Directions : (Q.No.71-80), In the following questions, sentences are given with blanks to be filled with an appropriate and suitable word. Four alternatives are suggested for each question. Choose the correct alternative out of the four.**

71. I looked this word \_\_\_\_ in the dictionary, but I still don't understand it.

- a) From                      b) On  
c) Up                      d) Out

72. He exulted \_\_\_\_ his rival's failure.

- a) At                      b) Over  
c) On                      d) In

73. The computer manual was \_\_\_\_ to understand.

- a) As clear as ice                      b) As clear as snow  
c) As clear as sand                      d) As clear as mud

74. As \_\_\_\_, he left his pen at home.

- a) Usually                      b) Always  
c) Ever                      d) Usual

75. \_\_\_\_ the end they reached the city.

- a) After                      b) At  
c) In                      d) By

76. He is three years \_\_\_\_ than I.

- a) Older                      b) Bigger  
c) Elder                      d) Smaller

77. The committee will \_\_\_\_ to any decision on which it is not fully informed.

- a) Acquiesce                      b) Acquiesce  
c) Acquiesce                      d) Acquiesce

78. I \_\_\_\_ a shower-bath every morning.

- a) Have                      b) Make

- c) Will make                      d) Am taking

79. I have \_\_\_\_ them across the country.

- a) Drove                      b) Driven  
c) Driving                      d) Drive

80. It is important to \_\_\_\_ rumours before too many people hear them.

- a) Remove                      b) Avert  
c) Revert                      d) Quash

**Directions : (Q.No.81-90), In these questions, some of the sentences have errors and some have none. Find out which part of a sentence a, b, c has an error. If there is no error then d is the answer.**

81. It is high time (a) / we renovate (b) / our old house (c) / No error (d)

82. One of the girls (a) / who always give the correct answer (b) / is Jane (c) / No error (d)

83. Everything including (a) / the tooth-brush (b) / were packed (c) / No error (d)

84. According to (a) / my opinion (b) / he is right (c) / No error (d)

85. The most important feature (a) / of our products are that (b) / they are cheap (c) / No error (d)

86. The doctor (a) / asked his patient (b) / to regularly take this medicine (c) / No error (d)

87. They made her Secretary (a) / because they considered (b) / her as trustworthy and efficient (c) / No error (d)

88. Neither Singh (a) / nor Misra (b) / was present (c) / No error (d)

89. I thought of (a) / being a doctor, a soldier or a lawyer (b) / but neither of these careers suited me (c) / No error (d)

90. It is better (a) / to do some work well while young (b) / than spending all the time in play (c) / No error (d)

**Directions : (Q.No.91-100), In these ques-**

tions, four alternatives are given for the idiom/phrase. Choose the alternative which best expresses the meaning of the given idiom/phrase.

91. Donkey's years

- a) The age of a donkey
- b) A very long period of time
- c) To gossip or make friendly small talk
- d) A stupid person

92. Moved heaven and earth

- a) Did the utmost
- b) Rebellion against God
- c) Creator of heaven and earth
- d) To show respect

93. Read between the lines

- a) Remain satisfied
- b) Know the meanings of lines
- c) Difficult to solve
- d) Understand inner motive

94. Sixes and sevens

- a) Situation of uncertainty or confusion
- b) Number scrabble game
- c) Six pence and seven siblings
- d) Ecstatic mood

95. To break the ice

- a) To melt the ice
- b) To bring about discord
- c) To make an end
- d) To remove the tension

96. Under the weather

- a) Possibility of rain
- b) A storm approaching
- c) To deal with a tricky situation
- d) Slightly unwell

97. To pay back in the same coin

- a) Two sides of the same coin
- b) Pay a penalty
- c) To treat a person in the same way the person treated oneself
- d) Pay a price

98. With a pinch of salt

- a) Exaggerate
- b) Doubtfully
- c) Take with a grain of salt
- d) Swallowed salt

99. My neck of the woods

- a) Spontaneous reaction
- b) To improvise or do something without preparation
- c) Area where someone lives
- d) Nervous before a big event

100. Mad as a hatter

- a) Crazy for manufacturing hats
- b) Completely insane
- c) Disease that affects the brain
- d) To be clumsy



## PART - D - MATHEMATICS

Marks :100

Each question carries 2 marks :

101. The least number which when divided by 6, 7, 8, 9 and 12 leaves the remainder 1 in each case is

- a) 513
- b) 498
- c) 505
- d) 495

102. If M and N be any two numbers formed by using the four different digits 3, 5, 7, 8 then M-N is divisible by

- a) 8
- b) 9
- c) 11
- d) 7

103. If  $a + \frac{1}{a} = \sqrt{3}$ , then  $a^3 + \frac{1}{a^3}$  is equal to

- a) 0
- b) 1
- c)  $3\sqrt{3}$
- d)  $2\sqrt{3}$

104.  $\left(11 \div 2\frac{1}{5}\right) \div \frac{11}{5}$  of  $2\frac{1}{2} - 1$  is equal to

- a)  $\frac{1}{11}$
- b)  $5\frac{20}{19}$
- c)  $-1\frac{10}{11}$
- d)  $-\frac{1}{11}$

105. The sum of the reciprocals of the fractions

$\frac{2}{3}, \frac{3}{4}$  and  $\frac{4}{5}$  is greater than

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

106. If  $\frac{\sqrt{3}-1}{\sqrt{3}+1} = a - \sqrt{3}$ , then a is

- a) An even integer
- b) A prime number
- c) Greater than 1
- d) All of the above

107. Let  $x * y = x^2 + 2y$ . What is the value of p if  $4*(3*p) = 50$  ?

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

108. A sum of Rs. 1360 has been divided among

A, B and C such that A gets  $\frac{2}{3}$  of what B gets

and B gets  $\frac{1}{4}$  of what C gets. B's share is

- a) Rs.120
- b) Rs.160
- c) Rs.240
- d) Rs.300

109. If  $5\frac{2}{3} + ?\frac{5}{6} = 2$ , then the number which

comes in place of '?' is

- a) 3
- b) 4
- c) 5
- d) None of the above

110. The population of a town increased from 50,000 to 52,000. Then the percentage of increase in population is

- a) 4%
- b) 5%
- c) 6%
- d) 10%

111. From a man's salary 25% is deducted on house rent, 20% of the rest is deducted on education of children and 40% of the rest is deducted on food, still he is left with Rs.9,000. His salary is

- a) Rs.40,000
- b) Rs.30,500
- c) Rs.25,000
- d) Rs.20,500

112. If 30% of  $x = 20\%$  of  $y$ , then 60% of  $y$  is equal to

- a) 80% of  $x$
- b) 90% of  $x$
- c) 75% of  $x$
- d) 40% of  $x$

113. The square of a whole number cannot end in

- a) 0
- b) 2
- c) 4
- d) 9

114. The polynomial  $x^n + 2x^{n-1} - x^3 - x^2 + ax + b$  cannot be of degree 3 if n is equal to

- a) 3
- b) 2
- c) 1
- d) None of the above

115. In an examination, a pupil's average marks were 63 per paper. If he had obtained 20 more marks in his Geography paper and 2 more marks in his History paper, his average per paper would have been 65. How many papers were there in the examination ?

- a) 9
- b) 10
- c) 11
- d) 12

116. At what percentage above the cost price must an article be marked so as to gain 33% after allowing a customer a discount of 5% ?

- a) 40%                      b) 50%  
c) 38%                      d) 28%

117. A dishonest dealer professes to sell his goods at cost price, but he used weight of 900gm for a kg. His gain percent is

- a) 9%                      b)  $11\frac{1}{9}\%$   
c)  $9\frac{1}{11}\%$                       d) 12%

118. By selling an article for Rs.45,000, a person loses 10%. At what price should he sell it to gain 15% ?

- a) Rs.50,000                      b) Rs.55,000  
c) Rs.57,500                      d) Rs.60,000

119. On a certain sum, the simple interest at the end of  $6\frac{1}{4}$  years becomes  $\frac{3}{8}$  of the sum. The rate percent is

- a) 7%                      b) 6%  
c) 5%                      d)  $5\frac{1}{2}\%$

120. A sum of money placed at compound interest doubles in 5 years. It will amount to 8 times at the same rate of interest in

- a) 15 years                      b) 20 years  
c) 16 years                      d) None of the above

121. Ten years ago, A was one-third as old as he will be 20 years from now. A is now

- a) 32 years                      b) 30 years  
c) 27 years                      d) 25 years

122. A works twice as fast as B. If B can complete a work in 12 days independently, the number of days in which A and B together can finish the work is

- a) 6 days                      b) 4 days  
c) 5 days                      d) 8 days

123. A man is 24 years older than his son. In two years, his age will be twice the age of his

son. The present age of the son is

- a) 14 years                      b) 18 years  
c) 20 years                      d) 25 years

124. A pipe can fill a cistern in 6 hours. Due to a leak in the bottom, it is filled in 7 hours ; when the cistern is full, in how much time will it be emptied by the leak ?

- a) 40 hours                      b) 42 hours  
c) 45 hours                      d) 30 hours

125. The value of k for which  $x^4-2x^3+x^2-3x+k$  is divisible by  $(x+1)$  is

- a) -7                      b) 7  
c) -3                      d) 3

126. The simultaneous equations  $ax+by-2=0$ ,  $ax+by+1=0$  have

- a) A unique solution  
b) Infinitely many solutions  
c) No solution  
d) None of the above

127. A person travels from P to Q at a speed of 40kmph and returns by increasing his speed by 50%. His average speed for both the journey is

- a) 48 kmph                      b) 50 kmph  
c) 60 kmph                      d) 120 kmph

128. A train 125m long passes a man, running at 5 kmph in the same direction in which the train is going in 10 seconds. The speed of the train is

- a) 45 kmph                      b) 60 kmph  
c) 54 kmph                      d) 50 kmph

129. A boat takes thrice as much time to sail in the upstream of a river as it would have taken to sail in the downstream. If the speed of the current is 5km/hr, then the speed of the boat in still water is

- a) 6km/hr                      b) 8km/hr  
c) 10km/hr                      d) 12km/hr

130. A boatman rows to a place 45km distant and back in 20 hours. He finds that he can row 12 km with the current in the same time as 4km against it. The speed of the current is

- a) 3 km/hr                      b) 2.5 km/hr  
c) 4 km/hr                      d) 3.5 km/hr

131. Which of the following year is a leap year?

- a) 900                      b) 1100  
c) 1900                      d) None of the above



132. When the time on the wall clock is 3:30pm, the acute angle between the hour hand and the minute hand is

- a)  $60^\circ$                       b)  $75^\circ$   
c)  $80^\circ$                       d)  $82^\circ$

133. The wrong number in the series 5, 10, 18, 26, 37, 50 is

- a) 37                      b) 10  
c) 18                      d) 50

134. Which of the following is the descending order of the surds  $\sqrt[3]{4}$ ,  $\sqrt{3}$ ,  $\sqrt[4]{7}$  ?

- a)  $\sqrt[3]{4}$ ,  $\sqrt[4]{7}$ ,  $\sqrt{3}$                       b)  $\sqrt{3}$ ,  $\sqrt[4]{7}$ ,  $\sqrt[3]{4}$

- c)  $\sqrt{3}$ ,  $\sqrt[3]{4}$ ,  $\sqrt[4]{7}$                       d)  $\sqrt[4]{7}$ ,  $\sqrt{3}$ ,  $\sqrt[3]{4}$

135. The length of a rectangle is twice its breadth. If each side of the rectangle is decreased by 3 cm, its area becomes 5 sq.cm. The area of the original rectangle is

- a) 32 sq.cm                      b) 18 sq.cm  
c) 50 sq.cm                      d) Can't be determined

136. If  $x = 3 - 2\sqrt{2}$ , then considering the positive square root of  $x$ ,  $\sqrt{x} - \frac{1}{\sqrt{x}}$  is equal to

- a) 2                      b)  $2\sqrt{2}$   
c)  $-2\sqrt{2}$                       d) -2

137. If  $a : b : c = 3 : 4 : 7$  and  $a + b + c = 42$ , then  $a$  is equal to

- a) 14                      b) 9  
c) 6                      d) 15

138. If  $x + y = 2k$  and  $x - y = 4$ , then  $xy$  is equal to

- a)  $k^2 - 1$                       b)  $\frac{k^2 - 1}{4}$   
c)  $k^2 - 4$                       d)  $1 - k^2$

139. Which of the quadratic equations

(i)  $3x^2 + 7x - 4 = 0$  (ii)  $3x^2 + 7x + 4 = 0$  have rational roots ?

- a) (i) only                      b) (ii) only  
c) Both (i) and (ii)                      d) Neither (i) nor (ii)

140. How many numbers can be formed using the digits 1, 2, 3, 4 having two, three or four different digits ?

- a) 60                      b) 56  
c) 64                      d) 52

141. A box has 10 bulbs, out of which 4 are defective. If 3 bulbs are chosen at random, then the probability that none of them is defective is

- a)  $\frac{2}{3}$                       b)  $\frac{1}{4}$   
c)  $\frac{5}{6}$                       d)  $\frac{1}{6}$

142. If  $\tan 3x = \sin 45^\circ \cos 45^\circ + \sin 30^\circ$ , then the value of  $x$  is

- a)  $20^\circ$                       b)  $15^\circ$   
c)  $30^\circ$                       d)  $60^\circ$

143. Find the odd figure from the following

- a) Cylinder                      b) Cone  
c) Circle                      d) Sphere

144. Suppose  $AB$  be the diameter of a circle of radius  $r$  and  $C$  a point on the circumference; the largest possible area of the triangle  $ABC$  is

- a)  $r^2$                       b)  $\frac{1}{2}\pi r^2$   
c)  $\frac{1}{3}r^2$                       d)  $\frac{1}{2}r^2$

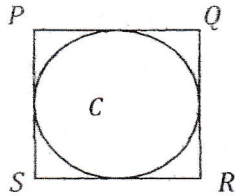
145. The perimeter of a circle is equal to that of a square. Their areas are in the ratio

- a)  $\pi : 3$                       b)  $3 : 4$   
c)  $4 : \pi$                       d)  $7 : 22$

146. Let  $n$  be a positive integer. Then  $a^n + b^n$  is divisible by  $(a + b)$

- a) If  $n$  is odd                      b) If  $n$  is even  
c) For all  $n$                       d) None of the above

147. The area of the square PQRS circumscribing the circle 'C' is 16. What is the area of the circle C ?



- a)  $3\pi$                       b)  $4\pi$   
c)  $16\pi$                       d)  $9\pi$

148. A copper sphere of radius 3cm is beaten and drawn into a wire of diameter 0.2cm. The length of the wire is

- a) 30m                      b) 33m  
c) 35m                      d) 36m

149. A chord of a circle is of length 8cm and it is at a distance 3cm from the centre of the circle; the radius of the circle is

- a) 4cm                      b) 5cm  
c) 6cm                      d) 7cm

150. How many metres of cloth 5m wide will be required to make a conical tent, the radius of whose base is 7m and whose height is 24m ?

[Given  $\pi = \frac{22}{7}$ ]

- a) 112m                      b) 115m  
c) 110m                      d) 108m

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