

A. General Instructions

1. Attempt ALL the questions. Answers have to be marked on the OMR sheets.
2. Time allowed to attempt this paper is **1 hour**.
3. This question paper contains **3 Sections**.
4. **Section- A** (Mental Ability Test)
Section- B (Mathematics)
Section- C (Science)
5. Rough spaces are provided for rough work inside the question paper. No additional sheets will be provided for rough work.
6. Blank Papers, clip boards, log tables, slide rule, calculator, cellular phones, pagers and electronic devices, in any form, are not allowed.

B. Filling of OMR Sheet

1. Ensure matching of OMR sheet with the Question paper before you start marking your answers on OMR sheet.
2. On the OMR sheet, darken the appropriate bubble with black pen for each character of your Enrolment No. and write your Name, Test Centre and other details at the designated places.

C. Marking Scheme for All Three Sections.

- (i) **Section-A (01 to 10)** contains 10 multiple choice questions of **MAT** which have only one correct answer. Each question carries **+4 marks** for correct answer and **-1 mark** for wrong answer.
- (ii) **Section-B (11 to 30)** contains 20 multiple choice questions of **Mathematics** which have only one correct answer. Each question carries **+4 marks** for correct answer and **-1 mark** for wrong answer.
- (iii) **Section-C (31 to 60)** contains 30 multiple choice questions of **Science** which have only one correct answer. Each question carries **+4 marks** for correct answer and **-1 mark** for wrong answer.


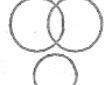

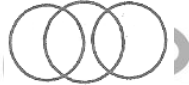


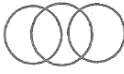
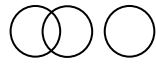
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Section – A

PART- I
MENTAL ABILITY TEST (MAT)

1. There are five friends A, B, C, D, and E. A is shorter than B but taller than E, C is tallest, D is little shorter than B and little taller than A. If they are standing in the order of their heights who will be in the middle?
 (a) D (b) C (c) A (d) B
2. $A \times B$ means A is the sister of B, $A \div B$ means A is the daughter of B, $A - B$ means A is the son of B. On the basis of this information you have to tell, how is P related to S in the relationship $P - Q \times R \div S$
 (a) Brother (b) Son (c) Grandson (d) Daughter's son
3. Six roads lead to a country. They may be indicated by letters X, Y, Z and digits 1, 2, 3. When there is a storm, Y is blocked. When there are floods X, 1 and 2 will be affected. When road 1 is blocked, Z also is blocked. At a time when there are floods and a storm also blows, which road(s) can be used?
 (a) Z and 2 (b) Only Z (c) Only 3 (d) Only Y
4. If \times means \div ; $-$ means \times ; \div means $+$ and $+$ means $-$ and all other rules in the mathematical operation are the same, then which one of the following gives the result of $(3 - 15 + 19) \times 8 + 6 = ?$
 (a) 8 (b) 6 (c) 4 (d) 2
5. XAYZ : PSRQ :: JMKL : ?
 (a) UVXZ (b) YZVX (c) WZYX (d) WXYZ
6. 7 : 42 : 9 : ?
 (a) 56 (b) 72 (c) 82 (d) 86
7. 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.
 (a) DBF (b) HFK (c) NLP (d) XVZ
8. We have three items, each having certain relationship among them. The same relationship is expressed by sets of circles. Each circle representing one item irrespective of its size. Find the correct representation
 Female, Medicine, Physician
 (a)  (b)  (c)  (d) 
9. Doctors, Engineers, Lawyers
 (a)  (b)  (c)  (d) 
10. At what time between 2 O'clock and 3 O'clock the hands of a clock will make an angle of 160° ?
 (a) 20 minutes past 2 (b) 30 minutes past 2 (c) 40 minutes past 2 (d) 50 minutes past 2

Space for Rough Work

Section-B

Mathematics

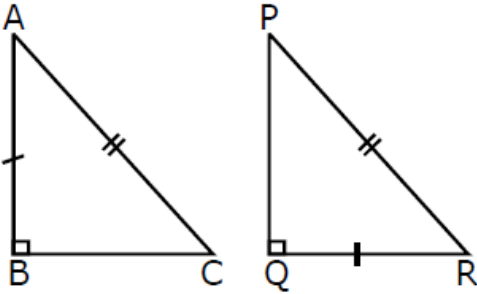
11. The product of two integers is 12, if one integer is -3 then the other one is :
 (a) +4 (b) -4 (c) 3 (d) -3
12. On substracing (-6) from 0, we get :
 (a) -6 (b) 6 (c) 7 (d) None of these
13. The additive inverse of -6 is
 (a) 6 (b) 0 (c) -5 (d) -7
14. $(-8) \div 0 = ?$
 (a) -8 (b) 0 (c) 8 (d) not defined
15. By how much does -3 exceed -5 ?
 (a) -2 (b) 2 (c) 8 (d) -8
16. Choose the rational number which does not lie between rational numbers $-\frac{2}{5}$ and $-\frac{1}{5}$.
 (a) $\frac{1}{4}$ (b) $-\frac{3}{10}$ (c) $\frac{3}{10}$ (d) $-\frac{7}{20}$
17. Choose the rational number which does not lie between rational numbers $\frac{3}{5}$ and $\frac{2}{3}$
 (a) $\frac{46}{75}$ (b) $\frac{47}{75}$ (c) $\frac{49}{75}$ (d) $\frac{50}{75}$
18. How many rational numbers exist between any two distinct rational numbers?
 (a) 2 (b) 3 (c) 11 (d) Infinite numbers
19. Which of the following statements is true?
 (a) $-\frac{4}{9} < -\frac{7}{18} < -\frac{5}{12} < -\frac{2}{3}$
 (b) $-\frac{7}{18} < -\frac{5}{12} < -\frac{4}{9} < -\frac{2}{3}$
 (c) $-\frac{2}{3} < -\frac{4}{9} < -\frac{5}{12} < -\frac{7}{18}$
 (d) $-\frac{5}{12} < -\frac{2}{3} < -\frac{4}{9} < -\frac{7}{18}$
20. Which rational numbers is exactly in middle between the two rational numbers $\frac{1}{3}$ & $\frac{1}{2}$?
 (a) $\frac{5}{12}$ (b) $\frac{5}{6}$ (c) $\frac{1}{12}$ (d) $\frac{3}{5}$

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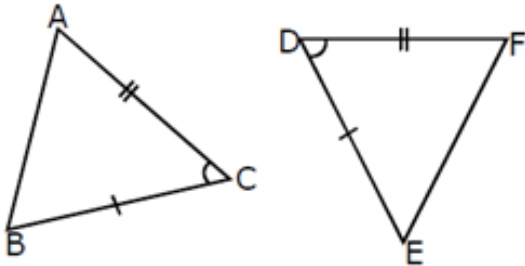
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21. By which criteria the given triangles are congruent.



- (a) ASA (b) SAS (c) RHS (d) SSS
22. For given figure, which one is correct



- (a) $\triangle ABC \cong \triangle DEF$ (b) $\triangle ABC \cong \triangle DFE$ (c) $\triangle ABC \cong \triangle EFD$ (d) $\triangle ABC \cong \triangle FED$

23. If $\left(\frac{5}{3}\right)^{-5} \times \left(\frac{5}{3}\right)^{-11} = \left(\frac{5}{3}\right)^{8x}$, then $x = ?$

- (a) $\frac{-1}{2}$ (b) -2 (c) 2 (d) $\frac{1}{2}$

24. The value of $(25)^{10}$ is:

- (a) 2^{50} (b) 2^{15} (c) 2^{10} (d) None of these

25. The mass of an oxygen atoms is 2.66×10^{-23} gram. The approximate mass of one billion of such oxygen atom is :

- (a) 2.66×10^{-20} (b) 2.66×10^{-17} (c) 2.66×10^{-14} (d) 2.66×10^{11}

26. If the mean of 7, 14, p, 9 and 16 is 11.5, then the value of p will be :

- (a) 7 (b) 9 (c) 10 (d) 11.5

27. The mean of first five multiples of 4 is

- (a) 10 (b) 11 (c) 12 (d) 14

28. The mean of six numbers is 15. If 2 is taken away from every number, the new mean would be :

- (a) 13 (b) 4 (c) 17 (d) 8

29. Probability of getting 2 in a rolling dice.

- (a) 1 (b) 2 (c) 0 (d) $\frac{1}{6}$

30. 65. Probability of getting not 5 in a rolling dice.

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

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Section-C

Science

31. The cause of formation of cyclones is
- Air rotates at low pressure with high speed
 - Air rotates at high pressure with high speed
 - Air rotates at high pressure with low speed
 - None of these
32. Air moves from a region of _____ pressure to a region of _____ pressure.
- High , low
 - Low, high
 - High, high
 - Low, low
33. We know that material bodies
- contract on heating and expand on cooling
 - neither expand nor contract on heating
 - expand on heating and contract on cooling
 - expand on cooling and remain unaffected on heating
34. A distance-
- Is always positive
 - Is always negative
 - May be positive as well as negative
 - Is neither positive nor negative
35. A particle is travelling with a constant speed. This means
- Its position remains constant as time passes
 - It covers equal distance in equal interval of time
 - Its acceleration is zero
 - It does not change its direction of motion
36. In 10 minutes, a car with speed of 60 kmh^{-1} travels a distance of
- 6 km
 - 600 km
 - 10 km
 - 7km
37. A polished silvery surface is a
- good absorber and good reflector of heat
 - good absorber and bad radiator of heat
 - poor absorber and good reflector of heat
 - poor reflector and good radiator of heat
38. A black body with a rough surface is a good
- reflector and poor absorber of heat
 - good absorber and good radiator of heat
 - absorber and poor radiator of heat
 - reflector and poor radiator of heat
39. Sweating causes cooling by
- conduction
 - radiation
 - convection
 - evaporation
40. We put glass piece on a printed page image of prints on the page has same size. The piece is-
- Convex lens
 - Glass slab
 - Concave lens
 - Prism

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41. Which one of the following is a physical change?
(a) Digestion of food (b) Boiling of an egg (c) Making a cup of tea (d) None of these
42. Photosynthesis is a _____.
(a) physical change (b) chemical change (c) both (a) & (b) (d) None of these
43. The process of obtaining pure crystals of copper sulphate from copper sulphate solution is known as
(a) crystallisation (b) galvanisation (c) rusting (d) None of these
44. Water fit for drinking is
(a) saline water (b) soft water (c) potable water (d) None of these
45. The method of watering the roots of plants directly is
(a) surface water harvesting
(b) drip irrigation
(c) water table
(d) None of these
46. Water harvesting is done to
(a) store water underground
(b) store water in fields
(c) distribute water in fields
(d) None of these
47. Which one of the following is not a natural fibre?
(a) Silk (b) wool (c) Terylene (d) jute
48. Which of these fabrics will you choose to wear in hot and humid conditions?
(a) Wool (b) nylon (c) Silk (d) cotton
49. Which of the following is obtained from the hair of animals?
(a) Wool (b) nylon (c) Cotton (d) silk
50. Which type of soil is good for the growth of cotton plant?
(a) alluvial soil (b) red soil (c) black soil (d) laterite soil

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51. The energy currency of cells:
(a) ADP (b) AMP (c) ATP (d) NADP
52. Largest gland of human digestive system:
(a) Pancreas (b) Liver (c) Small intestine (d) Large intestine
53. Which is known as voice box?
(a) Pharynx (b) larynx (c) glottis (d) epiglottis
54. E coli in human intestine synthesis.
(a) Vitamin B and D (b) Vitamin A and K (c) Vitamin B and C (d) Vitamin B and K
55. Bacteria commonly live in human intestine:
(a) Vibro cholera (b) E coli (c) Bacillus anthracis (d) Corynebacterium
56. Which of the following is a wildlife santury in rajasthan?
(a) Ranthambore (b) Periuar (c) Kaziranga (d) Badhawgarh
57. The first cytologically visible evidence of fact that cell about to divide:
(a) Division of centriole
(b) Duplication of chromosome
(c) Elongation of chromosome
(d) Coiling of chromosome
58. Middle lamella consist of:
(a) Liginin (b) Cellulose (c) Hemicellulose (d) Calcium & Magnesium pectate
59. Dimension of cell expressed in:
(a) Centimetre (b) Angstrom (c) Micron (d) Both b and c
60. Cells organelle involved in forming complex sugar from simple sugar.
(a) E. R (b) Ribosomes (c) Plastids (d) Golgi bodies

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