Section - I : MENTAL ABILITY

❖ ***Q.No. 1 to Q.No. 25 Single correct answer type: In this type there is only one correct answer.***

Choose only one option for an answer : (Correct Answer : +3, Wrong Answer : –1, Unattempted: 0)

1. Find the missing term of 3.5, 7, 10.5, 14 ?

   (A) 15.5 (B) 16.5 (C) 18.5 (D) 17.5

2. 21 : 3 : : 574 :?

   (A) 23 (B) 113 (C) 91 (D) 82

3. If the code for BLUE is YOFV, what is MZEB the code for ?

   (A) PACK (B) ROAD (C) NAVY (D) HOLE

4. Which one is different ?

   (A) Mother (B) Friend (C) Sister (D) Father

5. Which number will complete the pattern ?

   $\frac{P}{32}$ $\frac{36}{R}$ $\frac{T}{40}$ $\frac{44}{V}$ $\frac{?}{?}$

   (A) $\frac{V}{30}$ (B) $\frac{W}{46}$ (C) $\frac{X}{48}$ (D) $\frac{W}{48}$

6. A clock is so placed that 12 moon its minute hand points towards North-East. In which direction does it hour Hand point at 1 : 30 pm ?

   (A) North (B) South (C) East (D) West

7. Which of the following diagrams indicate the best relation ship.

   Uttar pradesh, Kanpur, Jaipur

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

8. If A denotes $\times$, B denotes $\div$, C denotes + and D dinotes –, then 16 C 24 B 8 D 6 B 2 A 3 = ?

   (A) $\frac{13}{6}$ (B) 10 (C) $14\frac{1}{2}$ (D) $-\frac{1}{6}$

9. If r is ranked fifth, which of these must be true

   (A) S score the heghtest (B) R is ranked second

   (C) T is ranked third (D) Q is ranked fourth

10. Arrange the following words as per order in the dictionary.

    (I) Hair (II) Heena (III) Harmonium (IV) Host

    (A) II, III, IV, I (B) I, III, IV, II (C) I, III, II, IV (D) III, I, II, IV

❖ ***Read the following information carefully to answer Q.11 to Q.13 given below:***

V, U and T are sitting around a circle. A, B and C are sitting around the same circle but two of them are not taking center. V is second to the left of C. U is second to the right of A, B is third to the left of T. C is second to the right of T. A and C are not sitting together

11. Which of the following is not facting center ?

(A) BA (B) CA (C) BC (D) can't be determind

12. What is the position of V with respect to C ?

(A) second to right (B) third to the left (C) fourth of the left (D) fourth of the right

13. What is the position of A with respect to U ?

(A) Second to left (B) Second to the right (C) Third to the right (D) can not be determined

14. P is Y's brother, Y is Q's father, Q and X are sister. How X related to P ?

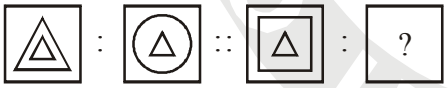
(A) Niece (B) Cousin (C) Aunt (D) Nephew

15. M is father of O and P is son of Q. N is Brother of M. If O is sister of P, How is N related to Q ?

(A) Daughter (B) Brother-in-law (C) Sister-in-law (D) Husband

16. Find the figure that comes in place of ?

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

17. 

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

18. Find the figure which is odd one out.

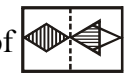
(A)  (B)  (C)  (D) 

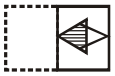
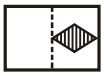
19. Choose the correct mirror image of EMANATE

(A) ƎWAИATƎ (B) EMAИATƎ (C) ETANAME (D) ƎTAИAMƎ

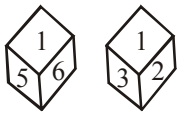
20. How many square in 

(A) 8 (B) 12 (C) 15 (D) 18

21. Choose the correct figure of 

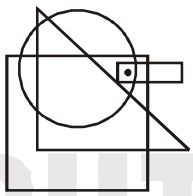
(A)  (B)  (C)  (D) 

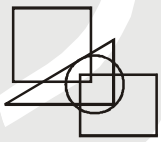
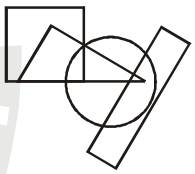
22. Two position of the same dice are shown below when u is at the bottom, what number will be on the top ?

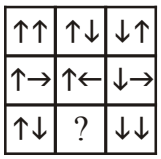


(A) 1 (B) 3 (C) 5 (D) 20003

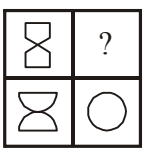
23. Select the one which satisfies the same condition of placement of the dots in figure.



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

24. 

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

25. 

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

Section - II : SCIENCE

❖ ***Q.No. 26 to Q.No.35 Single correct answer type: In this type there is only one correct answer. Choose only one option for an answer : (Correct Answer : +3, Wrong Answer : –1, Unattempted: 0)***

26. When two bodies are tubbed against each other.

(A) They acquire equal and opposite charges

(B) They acquire similar charges

(C) One body acquires a charge and the other remains uncharged

(D) They acquire different amounts of charge

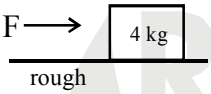
27 If two plane mirror are inclined at an angle of 30° to each, how many image of the object are formed?

(A) 9 (B) 10 (C) 11 (D) 12

28. Increases in volume of a body on heating is called:

(A) Linear expansion (B) Superficial expansion (C) Cubical expansion (D) None of these

29. A block of mass 4kg is kept at rest on a horizontal surface when 4N force is applied on it __



How much friction force is acting on the block?

(A) Zero (B) 2N (C) 4N (D) 8N

30. Which of the following is a heterogeneous mixture ?

(A) A mixture of water and sugar (B) A mixture of water and common salt

(C) A mixture of water and saw duct (D) A mixture of water and glucose

31. For the formation of normal salt from one molecule of H_2SO_4, how many molecules of NaOH are required ?

(A) One (B) Two (C) Four (D) Three

32. Identify true statement among the following

(A) Gases are highly compressible and diffuse very easily

(B) Gases are highly compressible and posses strong forces

(C) Solid molecules are closely packed and highly compressible

(D) Solid molecules are loosely packed and posses strong forces

33. Which one of the following is produced when microorganism acts upon the dead plants ?

(A) Soil (B) Petrolium (C) Humus (D) Coal

34. Which one of the following cell organelle contains DNA ?

(A) Vacuole (B) SER (C) Ribosomes (D) Mitochondria

35. Rayon is known as synthetic fiber. The raw materials for making of rayon is obtained from which one of the following sources ?

(A) Cotton plants (B) Tree pulp (C) Sheep (D) Sisal

❖ ***Q.No. 36 to Q.No.40 Multiple correct answer type: In this type there are one or more than one correct answer. Marks will be awarded only if all the correct options are marked.***

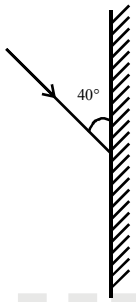
(Correct Answer : +4, Wrong Answer : 0)

36. A car starts at A with a speed of 40 kmph and reached B. Then the car returns to the starting point A with a speed of 60 kmph. What is average speed and average velocity?

(A) Average speed = 50 km/ h (B) Average velocity = 0

(C) Average speed = 48 km/h (D) Average velocity = 50 km/h

37. The diagram shows a single a ray of light being directed at a plane mirror. What are the angle of incidence and reflection?



(A) $\angle i = 40°$ (B) $\angle r = 40°$ (C) $\angle i = 50°$ (D) $\angle r = 50°$

38. Homogenous mixture among the following is / are

(A) Air (B) Muddy water (C) Smoke (D) Alcohol and water

39. Which of the following options are correct?

Statement 1 : Chlamydomonas is a protozoa.

Statement 2 : Amoeba is a protozoa.

Statement 3 : Paramoecium is a protozoa.

(A) Statement 1 is correct (B) Statement 1 and 2 are correct.

(C) Statement 1 is incorrect. (D) Statement 2 and 3 are correct.

40. Find the options containing the correct pair based on the information given in the columns.

Column I	**Column II**
(a) Seal	(i) Can eat both plants and animals
(b) Camel	(ii) Living in polar regions
(c) Monkey	(iii) Living on tall trees
(d) Bear	(iv) Living in desert

(A) (a) - (iii) (B) (a) - (ii) (C) (c) - (iii) (D) (a) - (ii), (b) - (iv) , (d) - (i)

❖ ***Q.No.41 Matrix Match Type: In this type statements are given in 2 columns which have to be matched. The statements in Column – I are labeled with choices A, B, C and D, while the statements in Column- II are labeled with choices p,q,r,s and t. For each option in column-I, there is only one correct option available in column-II :***

(Correct Answer : + 1.25 marks for each correct match, Wrong Answer : 0)

41.

Column I	**Column II**
(A) Oxygen	(p) 0.03 – 0.04
(B) CO_2	(q) 1
(C) Inert gas	(r) 21
(D) Nitrogen	(s) 78
	(t) 71

❖ ***Q.No. 42 to Q.No.46 Integer type: The answer to each question is an integer ranging from 0 to 9 :***

(Correct Answer : +4, Wrong Answer : 0)

42. The relative density of an object is 8. The density of that object is ___

43. 0.4 A current is following across a 5Ω resistance. The potential difference across the resistor in volts is __

44. Which among the following are natural fibre

Silk, Nylon, Terycot, Cotton, Wool

45. Valency of Metal E is trivalent ∴ Number of chloride required to form Metal chloride is

46. How many of the plants given below are fibre yielding

Cotton, Mustard, Flax, Jute, Rubber

Section - III : MATHEMATICS

❖ ***Q.No. 47 to Q.No.56 Single correct answer type: In this type there is only one correct answer.***

Choose only one option for an answer : (Correct Answer : +3, Wrong Answer : –1, Unattempted: 0)

47. In the word ARITHMETIC, what percent of the letters are I's?

(A) 20% (B) 25% (C) 75% (D) None of these

48. Naresh earns Rs. 30800 per month. He keeps 50% for household expenses, 15% for his personal expenses, 20% for expenditure on his children and the rest he saves. What amount does he save per month?

(A) 4620 (B) 3080 (C) 30800 (C) 46200

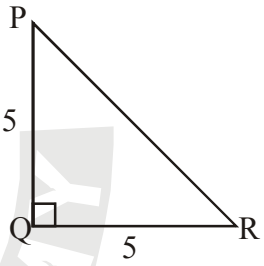
49. A machine listed at Rs. 8400 is available for Rs. 6300. Find the rate of discount offered

(A) 20% (B) 25% (C) 60% (D) 40%

50. If a bicycle wheel has 48 spokes, then the angle between a pair of two consecutive spokes is

(A) $\left(5\frac{1}{2}\right)^\circ$ (B) $\left(7\frac{1}{2}\right)^\circ$ (C) $\left(\frac{2}{11}\right)^\circ$ (D) $\left(\frac{2}{15}\right)^\circ$

51. In fig., $PQ \perp RQ, PQ = 5cm$ and $QR = 5$ cm. Then ΔPQR is



(A) a right triangle but not isosceles.

(B) an isosceles right triangle.

(C) isosceles but not a right triangle.

(D) neither isosceles nor right triangle.

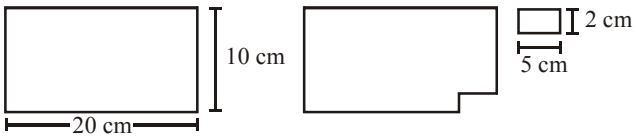
52. Floor of a room measures 4.5 metres × 3 metres. Find the minimum number of complete square slabs of length 150 cm required to cover the entire floor.

(A) 8 (B) 6 (C) 18 (D) 9

53. The length of a rectangular field is thrice its breadth. If the perimeter of this field is 800 m. What is the length of the field?

(A) 200 m (B) 300 m (C) 100 m (D) 400 m

54. Length and breadth of a rectangular sheet of a paper are 20 cm and 10 cm, respectively. A rectangular piece is cut from sheet as shown in figure. Which of the following statements is correct for the remaining sheet?



(A) Perimeter remains same but area changes.

(B) Area remains the same but perimeter changes.

(C) Both area and perimeter are changing.

(D) Both area and perimeter remain the same.

55. Megha's age (in years) is 2 more than 5 times her daughter's age.

(A) 5 m (B) 5(m + 2) (C) 5m + 2 (D) 2m + 5

56. If each match box contains 50 matchsticks, the number of matchsticks required to fill n such boxes is

(A) 50 + n (B) 50 n (C) 50 ÷ n (D) 50 – n

❖ ***Q.No. 57 to Q.No.61 Multiple correct answer type: In this type there are one or more than one correct answer. Marks will be awarded only if all the correct options are marked.***

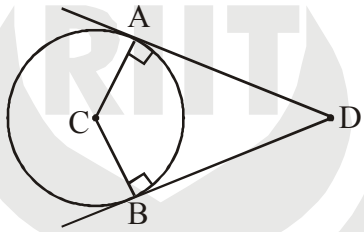
(Correct Answer : +4, Wrong Answer : 0)

57. A student got 45% marks in the first paper and 70% in the second paper. How much percent should he get in the third paper so as to get 60% as overall score?

(A) 65 marks (B) 65% of total marks for that paper

(C) 80% marks of that paper (D) 80 marks

58. What conclusion can be drawn from each part of figure, if DC is the bisector of $\angle ADB$, $CA \perp DA$ and $CD \perp DB$?



(A) AD = BC (B) AD = BD

(C) If AD = BC then ABC is square (D) If AD = BC then ABCD is rectangle

59. (i) $a \times b = b \times a$ – commulative law

(ii) $a \times b \times c = (a \times b) \times c = a \times (b \times c)$ – Associative law

(iii) $a \times (b + c) = a \times b + a \times c$ – Distributive law

(iv) $(a + b) \cdot c = a \cdot c + b.c$ – Distributive law

(A) (i) and (ii) are correct (B) (i), (ii), (iii) are correct

(C) (i), (ii), (iii), (iv) are correct (D) (i) and (iii) are correct

60. Bhavna runs 10 times around a square field of side 80 m. Her sister Sushmita runs 8 time around a rectangular field with length 150 m and breadth 60 m. Who covers more distance? By how much?

(A) Sushmita covered 160 m more than bhavna

(B) Bhavna covered 160 m than sushmita

(C) Sushmita covered same distance as bhavna.

(D) None of these

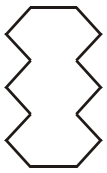
61. Octagon have

(A) 8 sides (B) 20 diagonals (C) Total 56 lines (D) 10 vertices

❖ ***Q.No.62 Matrix Match Type: In this type statements are given in 2 columns which have to be matched. The statements in Column – I are labeled with choices A, B, C and D, while the statements in Column- II are labeled with choices p,q,r,s and t. For each option in column-I, there is only one correct option available in column-II :***

(Correct Answer : + 1.25 marks for each correct match, Wrong Answer : 0)

62. Match the shapes (each side measures 2cm) in column I with the corresponding perimeters in column II :

Column I	**Column II**
(A) 	(p) 16 cm
(B) 	(q) 20 cm
(C) 	(r) 24 cm
(D) 	(s) 28 cm
	(t) 12 cm

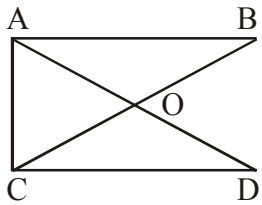
❖ ***Q.No. 63 to Q.No.67 Integer type: The answer to each question is an integer ranging from 0 to 9 :***

(Correct Answer : +4, Wrong Answer : 0)

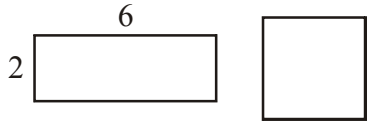
63. One - fourth of the total number of shoes in a shop were on discount sale. What percent of the shoes were there on normal price were a/b. Find a + b

64. x percent of 360 is 144 ? Find x / 10

65. Number of angles less than 180º in figure is n . Find $\frac{n}{2}$



66. A rectangle and a square have the same perimeter (shown in figure)



The area of the rectangle is A. A can be written as A = 2n + 4, Find n ?

67. ' x exceeds y by 7' can be expressed as x = y + n. Find n ? (Here n is an integer)

ANSWER KEY

SECTION - I - MENTABILITY

1.	(D)	2.	(D)	3.	(C)	4.	(B)	5.	(C)	6.	(C)
7.	(C)	8.	(B)	9.	(C)	10.	(C)	11.	(C)	12.	(D)
13.	(A)	14.	(A)	15.	(B)	16.	(B)	17.	(C)	18.	(D)
19.	(D)	20.	(C)	21.	(B)	22.	(A)	23.	(B)	24.	(B)
25.	(B)										

SECTION - II - SCIENCE

26.	(A)	27	(C)	28.	(C)	29	(C)	30.	(C)	31.	(B)
32.	(A)	33.	(C)	34.	(D)	35.	(B)	36.	(B,C)	37.	(C,D)
38.	(A), (C)	39.	(C), (D)	40.	(B), (C), (D)	41.	$A \rightarrow r$	$B \rightarrow p$	$C \rightarrow q$	$D \rightarrow s$	
42.	(1)	43.	(2)	44.	(3)	45.	(3)	46.	(3)		

SECTION - III - MEHEMATICS

47	(A)	48.	(A)	49.	(B)	50.	(B)	51.	(B)	52.	(B)
53.	(B)	54.	(A)	55.	(C)	56.	(B)	57.	(A), (B)	58.	(B), (C)
59.	(A), (C), (D)			60.	(A), (B)	61.	(A), (B)				
62.	A – s , B – t , C – q , D – r					63.	(7)	64.	(4)		
65.	(6)	66.	(4)	67.	(7)						