



PCM

**SAMPLE PAPER  
ADMISSION TEST**



**DURATION: 3 Hours**

**M.MARKS: 400**

**General Instructions:**

1. Immediately fill in the particulars on this page of the test booklet.
2. The test is of 3 Hours duration.
3. The test booklet consists of 100 questions. The maximum marks are 400.
4. All questions are compulsory.
5. There is only one correct response for each question.
6. Each correct answer will give **4 marks** and -1 for any wrong answer.
7. No student is allowed to carry any textual material, printed, or written, bits of paper, pager, mobile phone, any electronic device, etc. inside the examination room/hall.
8. The keyboard will be disabled during the exam.
9. Candidate will have to answer using "mouse".
10. An automatic clock has been generated in the device. A designated time will be given to the candidates, where the time will be allotted for the login and log-out. When the clock reaches zero, the exams will stop automatically.

**Name of the Student (In CAPITALS):** \_\_\_\_\_

Date of exam - \_\_\_\_\_ Father name - \_\_\_\_\_

Class - \_\_\_\_\_ School Name - \_\_\_\_\_

\_\_\_\_\_ D.O.B. \_\_\_\_\_

9th class(%) / School topper \_\_\_\_\_

Present Address - \_\_\_\_\_

Centre name - \_\_\_\_\_

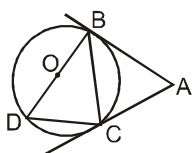
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## PART : I (MATHEMATICS)

### SECTION – 1 : (Maximum Marks : 150)

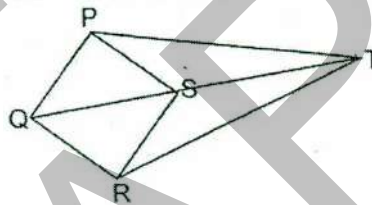
- This section contains **FIFTY** questions
- Each question has **FOUR** options (A), (B), (C) and (D). **ONLY ONE** of these four option is correct

1. The traffic lights at three different signals change after 48 seconds, 72 seconds and 108. If they change at 7 a.m. simultaneously. How many times they will change between 7 a.m. to 7 : 30 a.m. simultaneously ?  
 (A) 3 (B) 4 (C) 5 (D) 2
2. If  $a = b^x$ ,  $b = c^y$ ,  $c = a^z$ , then  $xyz$  is :  
 (A) -1 (B) 0 (C) 1 (D)  $abc$
3. In equation  $4p + \frac{6}{q} = 15$  and  $6p - \frac{8}{q} = 14$  the value of  $p$  and  $q$  would be-  
 (A)  $p = 3, q = 2$  (B)  $p = 4, q = 2$  (C)  $p = 7, q = 6$  (D)  $p = 4, q = 3$
4. Which one of the following quantities is not rational ?  
 (A)  $1 - \tan^2 30^\circ / 1 + \tan^2 30^\circ$  (B)  $4 \cos^3 30^\circ - 3 \cos 30^\circ$   
 (C)  $3 \sin 30^\circ - 4 \sin^3 30^\circ$  (D)  $2 \cot 30^\circ / \cot^2 30^\circ - 1$
5. The mid point of the base of a triangle is equidistant from all the vertices. The triangle is :  
 (A) equilateral (B) right angled (C) isosceles (D) none of these
6. The average mark scored by girls is 68 and that of the boys is 62. The average marks of the whole class is 64. The ratio of the girls and boys in the class is :  
 (A) 1 : 1 (B) 1 : 2 (C) 2 : 3 (D) 3 : 5
7. If  $\alpha, \beta$  be the roots of  $x^2 - a(x-1) + b = 0$ , then value of  $\frac{1}{\alpha^2 - a\alpha} + \frac{1}{\beta^2 - a\beta} + \frac{2}{a+b}$  is  
 (A) 1 (B) 0 (C) 2 (D) 3
8. Sum of first 24 terms of the AP  $a_1, a_2, a_3, \dots$ , if it is known that  $a_1 + a_5 + a_{10} + a_{15} + a_{20} + a_{24} = 225$  is :  
 (A) 450 (B) 900 (C) 1350 (D) None of these
9. Coordinates of P and Q are (4, -3) and (-1, 7). The abscissa of a point R on the line segment PQ such that  $\frac{PR}{PQ} = \frac{3}{5}$  is  
 (A)  $\frac{18}{5}$  (B)  $\frac{17}{5}$  (C) 1 (D)  $\frac{17}{8}$
10. A man, whose eyes are at a height of 10 m above water level, is standing on the deck of a ship. He observes the angle of elevation of the top of a vertical tower as  $45^\circ$  and the angle of depression of the image of the top of the tower in water as  $60^\circ$ . The distance of the tower from the man is :  
 (A)  $10(\sqrt{6} + \sqrt{2})$  (B)  $10(\sqrt{3} + 1)$  (C)  $20(\sqrt{3} + 1)$  (D)  $20(\sqrt{6} + \sqrt{2})$
11. In the given figure, O is the centre of a circle and BD is a diameter. AB and AC are tangents touching the circle at B & C respectively. If  $\angle BAC = 70^\circ$  then  $\angle OBC$  is :



- (A)  $30^\circ$  (B)  $35^\circ$  (C)  $40^\circ$  (D)  $45^\circ$

12. Four circular cardboard pieces, each of radius 7 cm. are placed in such a way that each piece touches the two other pieces. The area of the space enclosed by the four pieces is :  
 (A)  $21 \text{ cm}^2$  (B)  $42 \text{ cm}^2$  (C)  $84 \text{ cm}^2$  (D)  $168 \text{ cm}^2$
13. The perimeter of the ends of a frustum are 48 cm and 36 cm respectively. If the height of the frustum is 11 cm, then the volume is :  
 (A)  $1400 \text{ cm}^3$  (B)  $1500 \text{ cm}^3$  (C)  $1554 \text{ cm}^3$  (D)  $1600 \text{ cm}^3$
14. A bag contains 20 balls out of which  $x$  are black. If 10 more black balls are put in the box, the probability of drawing a black ball is double of what it was before. The value of  $x$  is :  
 (A) 0 (B) 5 (C) 10 (D) 40
15. If the first four terms of an arithmetic sequence are :  
 $a, 2a, b$  and  $a - 6 - b$  for some numbers "a" and "b", then the value of the 100<sup>th</sup> term is :  
 (A) -100 (B) -300 (C) 150 (D) -150
16. LCM of two numbers  $x$  and  $y$  is 720 and the LCM of numbers  $12x$  and  $5y$  is also 720. The number  $y$  is.  
 (A) 180 (B) 144 (C) 120 (D) 90
17. If  $a + c + e = 0$  and  $b + d = 0$  then  $ax^4 + bx^3 + cx^2 + dx + e$  is exactly divisible by :  
 (A)  $x + 1$  (B)  $x - 1$   
 (C)  $(x + 1)$  and  $(x - 1)$  (D)  $(x - 2)$
18. A train travels a distance of 300 Km with a constant speed. If the speed of the train is increased by 5 Km an hour, the journey would have taken 2 hours less. The speed of train will be -  
 (A) 20 km/h (B) 30 km/h (C) 25 km/h (D) 40 km/h
19. In right triangle ABC,  $BC = 7$  cm,  $AC - AB = 1$  cm and  $\angle B = 90^\circ$ . The value of  $\cos A + \cos B + \cos C$  is:  
 (A)  $\frac{1}{7}$  (B)  $\frac{32}{24}$  (C)  $\frac{31}{25}$  (D)  $\frac{25}{31}$
20. In the figure,  $PQ = QR = RS = SP = SQ = 6$  cm and  $PT = RT = 14$  cm. The length  $ST$  is :

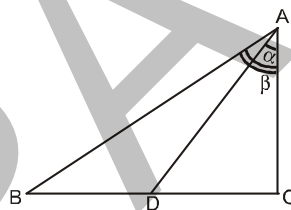


- (A)  $4\sqrt{10}$  cm (B)  $(7\sqrt{3} - 2)$  cm (C) 10 cm (D) 11 cm
21. Let the maximum possible value of mean of 7 integers be 3. If these numbers are arranged in increasing order and every integer is distinct, then find the maximum value of smallest number.  
 (A) -2 (B) 0 (C) 1 (D) -1
22. If  $\sqrt{x-1} - \sqrt{x+1} + 1 = 0$ , then  $4x$  equals :  
 (A) 0 (B) 1 (C) 4 (D) 5
23. The 4<sup>th</sup> term of an A.P. is 7 and 8<sup>th</sup> term is 15 then first term and common difference are :  
 (A) 2, 5 (B) 2, 3 (C) 1, 2 (D) none of these
24. Four points are on a line segment, as shown. If  $AB : BC = 1 : 2$  and  $BC : CD = 8 : 5$ , then  $AB : BD$  equals :  
 (A) 4 : 13 (B) 1 : 13 (C) 1 : 7 (D) 3 : 13
25. The upper part of a tree is broken over by the wind makes an angle of  $30^\circ$  with the ground and the distance from the root to the point where the top of the tree meets the ground is 15 m. The height of the broken part is :  
 (A)  $15 \sin 30^\circ$  m (B)  $15 \cos 30^\circ$  m (C)  $15 \tan 30^\circ$  m (D)  $15 \sec 30^\circ$  m

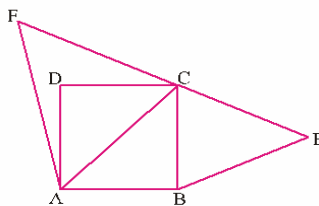


26. Two circles of radii  $a$  and  $b$  ( $a > b$ ) touch each other externally.  $ST$  is a common tangent touching the circles at  $S$  and  $T$  respectively, then  $ST^2$  is equal to :  
 (A)  $a + b$  (B)  $ab$  (C)  $2ab$  (D)  $4ab$
27. Points  $P$  and  $Q$  are 3 units apart. A circle centered at  $P$  with a radius of  $\sqrt{3}$  units intersects a circle centered at  $Q$  with a radius of 3 units at points  $A$  and  $B$ . If the area of quadrilateral  $PAQB$  is  $\frac{3}{2}\sqrt{a}$ , then  $a$  is equal to :  
 (A) 7 (B) 9 (C) 11 (D) 13
28. The ratio of the volume of a cube to that of a sphere which exactly fits inside the cube is :  
 (A)  $1 : 1$  (B)  $2 : \pi$  (C)  $\pi : 5$  (D)  $6 : \pi$
29. In a toss of four fair coins, the number of outcomes in which Head comes at most two times.  
 (A)  $\frac{5}{8}$  (B)  $\frac{6}{16}$  (C)  $\frac{3}{4}$  (D)  $\frac{11}{16}$
30.  $AD$  is bisector of  $\angle A$  of  $\triangle ABC$ , which meets side  $BC$  at  $D$ . If  $BC = K$  cm,  $CA = \ell$  cm, and  $AB = m$  cm, then the length of  $DC$  (in cm) is :  
 (A)  $\frac{K\ell}{m+\ell}$  (B)  $\frac{K(m+\ell)}{\ell}$  (C)  $\frac{Km}{m+\ell}$  (D)  $\frac{K(m+\ell)}{m}$
31. The H.C.F. and L.C.M. of two numbers are 21 and 4641 respectively, if one of the number lies between 200 to 300, then the two numbers are :  
 (A) 273, 357 (B) 273, 361 (C) 275, 361 (D) 273, 363
32. If  $R_1$  is the remainder when  $P(x) = 3x^4 + 5x^3 - 2x^2 - 4$  is divided by  $(2x - k)$ , where  $k$  is a constant.  $R_2$  is the remainder when  $P(x)$  is divided by  $(x + k)$ , if  $32R_1 - R_2 = 1$ , then find the remainder when  $3x^4 + 25x^3 - 14x^2 - 25$  is divided by  $(x - k)$ .  
 (A) 44 (B) 90 (C) 100 (D) none of these
33. If  $6x + 7y = 2004$  and  $7x + 6y = 4002$ , then  $x + y =$  equals  
 (A) 400 (B) 462 (C) 487 (D) 770

34. In the adjacent figure  $\triangle ABC$  is right angled at  $C$  and  $\frac{BD}{BC} = \frac{1}{3}$ , then the ratio  $\frac{\tan \alpha}{\tan \beta}$  is equal to :

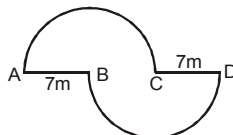


- (A)  $\frac{3}{4}$  (B)  $\frac{1}{2}$  (C)  $\frac{2}{3}$  (D)  $\frac{3}{2}$
35. Equilateral triangles are described on a side and diagonal of a square. The ratio of their areas is :



- (A)  $1 : 2$  (B)  $2 : 1$  (C)  $\sqrt{2} : 1$  (D)  $\sqrt{3} : 1$

36. Which of the following is an example of raw data ?  
 (A) Marks obtained by students in mathematics paper.  
 (B) Students results arranged in ranking order.  
 (C) Statistics shown in IPL matches.  
 (D) All of these
37. If the quadratic equation  $(a^2 - b^2)x^2 + (b^2 - c^2)x + c^2 - a^2 = 0$  has equal roots, then which of the following is true :  
 (A)  $b^2 + c^2 = a^2$       (B)  $b^2 + c^2 = 2a^2$       (C)  $b^2 - c^2 = 2a^2$       (D)  $a^2 = b^2 + 2c^2$
38. If  $\frac{1}{a}$ ,  $\frac{1}{b}$ ,  $\frac{1}{c}$  are the  $p^{\text{th}}$ ,  $q^{\text{th}}$ ,  $r^{\text{th}}$  terms respectively of an A.P. then  $ab(p - q) + bc(q - r) + ca(r - p)$  equals to :  
 (A) 1      (B) -1      (C) 0      (D) none of these
39. If the area of the equilateral  $\triangle OAB$  is  $9\sqrt{3}$  square units. If O is origin and B is on x-axis and A in first quadrant, then what are the coordinates of point A ?  
 (A)  $(3, 3\sqrt{3})$       (B)  $(3, \frac{\sqrt{3}}{2})$       (C)  $(9, 3\sqrt{3})$       (D)  $(2, \sqrt{3})$
40. On the level ground, the angle of elevation of the top of a tower is  $30^\circ$ . On moving 20 m nearer, the angle of elevation is  $60^\circ$ . The height of the tower is :  
 (A) 10 m      (B) 15 m      (C)  $10\sqrt{3}$  m      (D) 20 m
41. A circle C is drawn inside a square S so that the four sides of S are tangents to C. An equilateral triangle T is drawn inside C with its vertices on C. If the area of S is k times the area of T, then the value of k is :  
 (A)  $\frac{16}{3\sqrt{3}}$       (B)  $\frac{16}{\sqrt{3}}$       (C)  $\frac{32}{3\sqrt{3}}$       (D)  $\frac{32}{\sqrt{3}}$
42. If the radius of a circle is diminished by 10%, then its area is diminished by :  
 (A) 10%      (B) 19%      (C) 20%      (D) 36%
43. A conical vessel of radius 6 cm and height 8 cm is completely filled with water. A metal sphere is now lowered into the water. The size of the sphere is such that when it touches the inner surface, it just gets immersed. The fraction of water that overflows from the conical vessel is :  
 (A)  $\frac{3}{8}$       (B)  $\frac{5}{8}$       (C)  $\frac{7}{8}$       (D)  $\frac{5}{16}$
44. A number x is chosen at random from the numbers -3, -2, -1, 0, 1, 2, 3. The probability that  $|x| < 2$  is :  
 (A)  $\frac{5}{7}$       (B)  $\frac{2}{7}$       (C)  $\frac{3}{7}$       (D)  $\frac{1}{7}$
45. The interior angles of a polygon are in A.P. If the smallest angle be  $120^\circ$  and the common difference be 5, then the number of sides is :  
 (A) 8      (B) 10      (C) 9      (D) 6
46. An arch in the form of a circle has a span of 30 meters and a height of 10 meters. The radius of the arch in meters is :  
 (A) 12.25      (B) 15.50      (C) 16.75      (D) 16.25
47. If  $AB = BC = CD$  then find the perimeter of adjoining figure.



- (A)  $\frac{44}{7}$  m                      (B) 58 m                      (C) 142 m                      (D) none of these

48. Let A and B be two solid spheres such that the surface area of B is 300% more than the surface area of A. The volume of A is found to be k% lower than the volume of B. Then the value of k must be :

- (A) 85.5                      (B) 92.5                      (C) 90.5                      (D) 87.5

49. When two dice are thrown, the probability of getting a number always greater than 4 on the seconds dice is :

- (A)  $\frac{1}{6}$                       (B)  $\frac{1}{3}$                       (C)  $\frac{1}{36}$                       (D) none of these

50. While simplifying  $\frac{1 - \cos x}{1 + \cos x}$  two students got the following answers :

(I)  $\operatorname{cosec} x - \cot x$

(II)  $\frac{1}{\operatorname{cosec} x + \cot x}$

Choose the correct option.

(A) Both I and II are wrong

(B) Both I and II are right

(C) I is right, II is wrong

(D) I is wrong, II is right



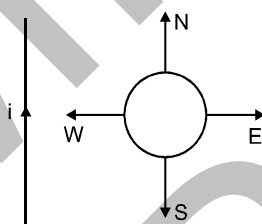
## 2. PHYSICS

### PART - II

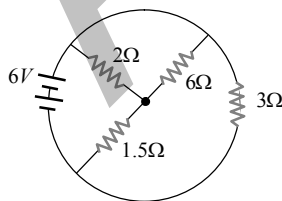
#### SECTION – 1 : (Maximum Marks : 45)

- This section contains **FIFTEEN** questions
- Each question has **FOUR** options (A), (B), (C) and (D). **ONLY ONE** of these four option is correct

51. Two particles having charges  $q_1$  and  $q_2$  when kept at a certain distance, exert force  $F$  on each other. If distance is reduced to half, force between them becomes :
- (A)  $F/2$                       (B)  $2F$                       (C)  $4F$                       (D)  $F/4$
52. A cylindrical bar magnet is kept along the axis of a circular coil. If the magnet is rotated about its axis, then
- (A) A current will be induced in a coil                      (B) No current will be induced in a coil  
(C) Only an e.m.f. will be induced in the coil                      (D) An e.m.f. and a current both will be induced in the coil
53. An object A is placed at a distance  $d$  in front of a plane mirror. If one stands directly behind the object at distance  $S$  from the mirror, then the distance of the image of A from the individual is :
- (A)  $2S$                       (B)  $2d$                       (C)  $S + d$                       (D)  $S + 2d$
54. If a wire of resistance  $1 \Omega$  is stretched to double its length, then the resistance will become :
- (A)  $3 \Omega$                       (B)  $2 \Omega$                       (C)  $5 \Omega$                       (D)  $4 \Omega$
55. A circular loop of wire is in the same plane as an infinitely long wire carrying a constant current  $i$ . Four possible motions of the loop are marked by N,E,W and S as shown :

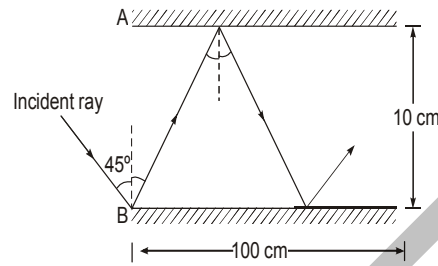


- (A) N                      (B) E                      (C) W                      (D) S
56. Which of the following would you prefer to read very small letters printed on a page of dictionary?
- (A) A convex lens of focal length 100 cm  
(B) A concave lens of focal length 10 cm  
(C) A concave lens of focal length 5 cm  
(D) A convex lens of focal length 5 cm.
57. The total current supplied to the circuit by the battery is



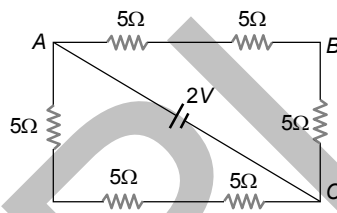
- (A) 1 A                      (B) 2 A                      (C) 4 A                      (D) 6 A
58. The direction of the force on a current-carrying wire placed in a magnetic field depends on :
- (A) the direction of the current but not on the direction of the field  
(B) the direction of the field but not on the direction of the current  
(C) the direction of the current as well as the direction of field  
(D) neither the direction of the current nor the direction of the field.

59. Two parallel plane mirrors A and B are placed at a separation 10 cm as shown in figure. A ray incident on the corner of mirror B at an angle of incidence  $45^\circ$ . Find the number of times this rays is reflected from mirror A :



- (A) 4 (B) 5 (C) 6 (D) 7

60. The potential difference between points A and B of adjoining figure is



- (A)  $\frac{2}{3}V$  (B)  $\frac{8}{9}V$  (C)  $\frac{4}{3}V$  (D)  $2V$

61. According to Faraday's law, the total charge induced in a conductor that is moved in a magnetic field depends upon :

- (A) initial magnetic flux (B) final magnetic flux  
(C) rate of change of magnetic flux (D) change in magnetic flux

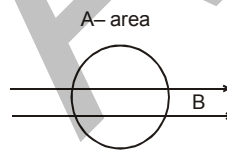
62. When viewed vertically a fish appears to be 4 metre below the surface of the lake. If the index of refraction of water is 1.33, then the true depth of the fish is :

- (A) 5.32 metres (B) 3.32 metres (C) 4.32 metres (D) 6.32 metres

63. If  $Q = 2$  coulomb and force on it is  $F = 100$  newton, then the value of electric field intensity will be:

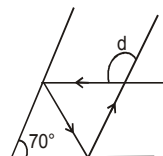
- (A) 100 N/C (B) 50 N/C (C) 200 N/C (D) 10 N/C

64. A coil is placed in a constant magnetic field. The plane of the coil is parallel to magnetic field as shown in figure then the flux passing through coil will be :



- (A) BA (B)  $\frac{BA}{2}$  (C) zero (D) infinity

65. A ray of light is incident on system of mirror as shown in the adjacent figure. What is the total deflection (d) of the ray when it emerges out after two reflections ?



- (A)  $220^\circ$  (B)  $180^\circ$  (C)  $120^\circ$  (D)  $140^\circ$



**CHEMISTRY**  
**PART - III**

**SECTION – 1 : (Maximum Marks : 45)**

- This section contains **FIFTEEN** questions
- Each question has **FOUR** options (A), (B), (C) and (D). **ONLY ONE** of these four option is correct

66. A method of obtaining oxygen, which illustrates a physical change and does not involve a chemical change, is :

- (A) electrolysis of water (B) decomposition of  $H_2O_2$   
(C) heating of potassium chlorate (D) distilling liquid air

67. Which of the following is not an open chain compound ?

- (A) Methane (B) Ethene (C) Toluene (D) Butyne

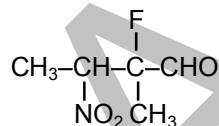
68. IUPAC name of the compound  $CH_3-\underset{\text{OH}}{\text{CH}}-\text{CH}_2-\overset{\text{CH}_3}{\underset{\text{OH}}{\text{C}}}-CH_3$  is

- (A) 1,1-dimethylbutane-1,3-diol (B) 2-methylpentane-2,4-diol  
(C) 1,3,3-trimethylpropane-1,3-diol (D) 1,3,3-trimethylpentane-2,4-diol

69. Alnico is a mixture of :

- (A) Fe, Al, Ni, Co (B) Fe, Cr, Ni, Co (C) Al, Ni, Co, Mn (D) Al, Cu, Mn, Mg

70. IUPAC name of the following compound is :



- (A) 1-Fluoro-1-methyl-2-nitrobutanal (B) 3-Nitro-2-fluoro-2-methylbutanal  
(C) 2-Fluoro-2-methyl-3-nitrobutanal (D) None of these

71. Which of the following is combination reaction ?

- (A)  $Fe + S \longrightarrow FeS$  (B)  $2HgO \longrightarrow 2Hg + O_2$   
(C)  $Zn + \text{dil. } H_2SO_4 \longrightarrow ZnSO_4(\text{aq.}) + H_2$  (D) None of these

72. Which of the following pairs of elements does not belong to same group ?

- (A) Cl, Br (B) N, P (C) Mg, Ca (D) Al, Si

73. Which of the following aqueous solutions has highest pH value ?

- (A) Sodium chloride (B) Potassium carbonate  
(C) Copper sulphate (D) Ammonium chloride

74. 1 carat is the amount equal to –

- (A) 200 kg (B) 200 gm (C) 200 mg (D) 20 mg

75. The IUPAC name of compound  $CH_3-\text{CH}_2-\underset{\text{CH}_3}{\text{CH}}-\text{COOH}$  is :

- (A) Butan-3-oic acid (B) Butan-2-oic acid  
(C) 3-Methylbutanoic acid (D) 2-Methylbutanoic acid

76. In the reaction  $\text{Fe}_2\text{O}_3(\text{s}) + 3\text{CO}(\text{g}) \longrightarrow 3\text{CO}_2(\text{g}) + 2\text{Fe}(\text{s})$  reducing agent is :  
(A)  $\text{Fe}_2\text{O}_3$  (B) CO (C) Fe (D)  $\text{CO}_2$
77. Which of the following is a correct pair according to increasing atomic number ?  
(A) Na, Ne (B) Ca, Cl (C) Be, B (D) He, H
78. When a base is diluted with water :  
(A) concentration of  $\text{OH}^-$  ions per unit volume increase.  
(B) concentration of  $\text{OH}^-$  ions per unit volume decrease.  
(C) concentration of  $\text{OH}^-$  ions per unit volume may increase or decrease depending upon the nature of the base.  
(D) no change in concentration of  $\text{OH}^-$  ions per unit volume occurs.
79. Which of the following is a sulphide ore ?  
(A) Bauxite (B) Haematite (C) Cuprite (D) Iron pyrites
80. In bio lab chemical used to preserve specimens is :  
(A) formaldehyde (B) ether (C) formic acid (D) none

**PART - IV (MENTAL ABILITY)**

**SECTION – 1 : (Maximum Marks : 60)**

- This section contains **TWENTY** questions
- Each question has **FOUR** options (A), (B), (C) and (D). **ONLY ONE** of these four option is correct

**Direction :** Find the wrong term ?

81. 9, 54, 44, 264, 254, 1520, 1514

- (A) 1514 (B) 1520 (C) 264 (D) 44

**Direction (82) :** Find the missing term ?

82. CK 16 9 JR  
OS 24 19 TX  
KM ? ? PV

- (A) 56, 84 (B) 84, 56 (C) 21, 14 (D) 14, 21

83.

7	8	9
7	15	24
7	?	46

- (A) 33 (B) 23 (C) 22 (D) 14

84. If **MOON** is coded as **19** and **RED** is coded as **9**, how would you code **SISA** in the same code language?

- (A) 15 (B) 16 (C) 13 (D) 18

**Directions : (85)** Read the following information carefully and answer the questions :

- Six flats on a floor in two rows, facing east and west are allotted to Q, R, S, T, U and V.
- R gets east side facing and not next to T.
- T and V get diagonally opposite flats.
- S next to V gets a west facing flat.
- U gets a east facing flat.

85. Which of the following combination gets west facing flats ?

- (A) SQR (B) RTS (C) STU (D) QSV

**Directions (86) :** In each of the following questions, two statements are given followed by three or four conclusions numbered I, II, III and IV. You have to take the given statements to be true even if they seem to be at variance from the commonly known facts and then decide which of the given conclusions logically follows from the given statements disregarding commonly known facts.

86. Statements : All politicians are honest. All honest are fair.  
Conclusions : I. Some honest are politician. II. No honest is politician.  
III. Some fair are politician. IV. All fair are politician.
- (A) None follows (B) Only I follows  
(C) Only I and II follow (D) Only I and III follow

**Directions : (87)** Read the following information and answer the question based on it :

In a school, there were five teachers. A and B were teaching Hindi and English C and B were teaching English and Geography. D and A were teaching Mathematics and Hindi. E and B were teaching History and French.

87. Who among the teachers was teaching maximum number of subjects ?

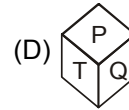
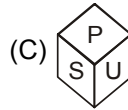
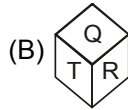
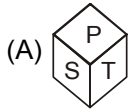
- (A) A (B) B (C) C (D) D

88. If Sripal's birthday falls on Thursday 20th March, 2000, then on which day of the week his birthday falls in the year 2001 ?

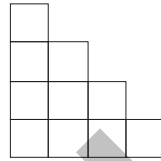
- (A) Wednesday (B) Friday (C) Saturday (D) Sunday



89. Which of the following dices is identical to the unfolded figure as shown here ?



90. How many squares are there in given figure :



(A) 12

(B) 14

(C) 13

(D) 11

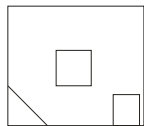
Directions : (91) Find the water-Image of the given term :

91. VAYU8436

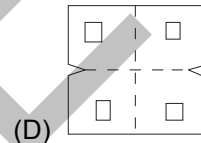
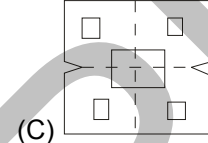
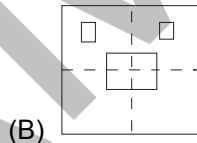
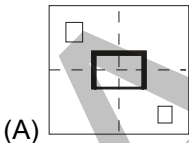


(D) None of these

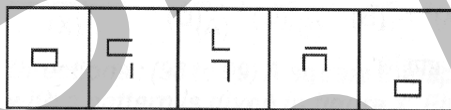
Directions : (92) A square transparent sheet with a pattern is given in figure X. Find out from amongst the alternatives as to how the pattern would appear when the transparent sheet is folded at the dotted line.



92.



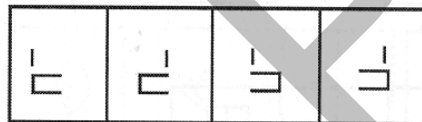
Directions : (93) There are two sets of figures namely problem figures containing five figures 1, 2, 3, 4, 5 and answer figures A, B, C, D. You have to select one figure from the answer set which will continue the same series as given in problem figures.



(1) (2) (3) (4) (5)

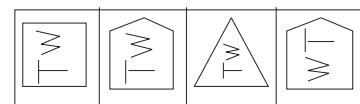
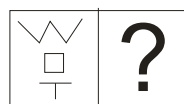
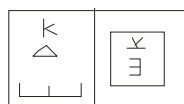
93.

Answer Figure



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

Directions : (94) Figures 1 and 2 are related in a particular manner. Establish the same relationship between figures 3 and 4 by choosing a figure from amongst the four alternatives, which would replace the question mark in figure (4).



94.

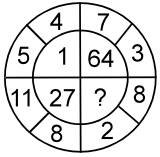
(1) (2)

(3) (4)

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

Direction (95) Find the missing term.

95. 7, 19, 55, 163, \_  
 (A) 387 (B) 329 (C) 527 (D) 487
96. KTE, SBM, AJU, IRC, ?  
 (A) KZQ (B) ZRL (C) QZK (D) LYJ

97.   
 (A) 125 (B) 216 (C) 121 (D) 225

98. If **SPECIAL** is coded as **KZHBODR** then **ORDINARY** would be ?  
 (A) ZQBMHCSX (B) XQZOHCQN (C) XQZMHCQN (D) ZQBHOBQZ

**Directions : (99)** Five persons are sitting in a row. One of the two persons at the extreme ends is intelligent and other one is fair. A fat person is sitting to the right of a weak person. A tall person is to the left of the fair person and the weak person is sitting between the intelligent and the fat person.

99. Tall person is at which place counting from right ?  
 (A) First (B) Second (C) Third (D) Fourth

**Directions (100) :** In the question below are given two statements followed by two conclusions numbered I and II. You have to take the given two statements to be true even if they seem to be at variance from commonly known facts. Read the conclusion and then decide which of the given conclusions logically follows from the two given statements, disregarding commonly known facts.

100. Statements : Some doctors are fools. Some fools are rich.  
 Conclusions : I. Some doctors are rich. II. Some rich are doctors.  
 (A) if only conclusion I follows (B) if only conclusion II follows  
 (C) if neither conclusion I nor II follows (D) if both conclusions I and II follow.