PCM

SCHOLARSHIP 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. _____

10th class(%) / School topper _____

Present Address -_____

_____

Centre name -_____

Contact number -_____ E-Mail ID -_____

PART - I (MATHEMATICS)

SECTION – 1

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

1. In standard definition of Euclid's division lemma, a = bq + r, which of following is necessary :

(A) a > b, a and b positive integers
(B) a > b, a is whole number and b is positive integer
(C) a and b are positive integers
(D) a is whole number and b is positive integer

2. If $f(x) = x^2 + 5x + p$ and $g(x) = x^2 + 3x + q$ have a common factor, then $(p - q)^2$ =

(A) 2(5p – 3q) (B) 2(3p-5q) (C) (3p – 5q) (D) (5p – 3q)

3. Let $a_1x + b_1y = c_1$ and $a_2x + b_2y = c_2$ be two equations where a_1, b_1, c_1, a_2, b_2, c_2 are real numbers. The graphical representation of these two equations both consist of (x_1, y_1) and (x_2, y_2). Which of the following condition is satisfied ?

(A) $\frac{a_1}{b_1} = \frac{a_2}{b_2} = \frac{c_1}{c_2}$
(B) $\frac{a_1}{a_2} = \frac{b_1}{b_2} \neq \frac{c_1}{c_2}$
(C) $\frac{a_1}{a_2} = \frac{b_1}{b_2} = \frac{c_1}{c_2}$
(D) None of these

4. If cosec x – sin x = a and sec x – cos x = b, then :

(A) $(a^2b)^{2/3} + (ab^2)^{2/3} = 1$
(B) $(ab^2)^{2/3} + (a^2b^2)^{2/3} = 1$
(C) $a^2 + b^2 = 1$
(D) $b^2 - a^2 = 1$

5. In a trapezium the two parallel sides measure a and b (a > b). A third line of length x is drawn such that it divides the area of trapezium into two equal parts and is parallel to a and b, then x equals :

(A) $\frac{a+b}{2}$
(B) $\sqrt{\frac{a^2+b^2}{2}}$
(C) $\sqrt{\frac{a^2-b^2}{2}}$
(D) Cannot be determined

6. The relation between mean, median and mode is :

(A) mode = 2 median – 3 mean
(B) mode = 3 median – 2 mean
(C) median = 3 mode – 2 mean
(D) mean = 3 median – 2 mode

7. The number of integral solution of the equation $7\left(y + \frac{1}{y}\right) - 2\left(y^2 + \frac{1}{y^2}\right) = 9$

(A) 0 (B) 1 (C) 2 (D) 3

8. A circle with area A cm^2 is contained in the interior of a larger circle with area (A + B) cm^2 and the radius of the larger circle is 4 cm. If A, B, A + B are in airthmetic progression, then the diameter (in cm) of the smaller circle is :

(A) $\frac{\sqrt{3}}{2}$ (B) $\frac{4\sqrt{3}}{3}$ (C) $\frac{8\sqrt{3}}{3}$ (D) $2\sqrt{3}$

9. A (b, –a) is reflection of B(c, –b) in y-axis and D(5, –d) is reflection of the point situated exactly between A and C (b, –d + 2) in x-axis, then find the value of (a + b – c + 2d), if (– d + 2) > – a.

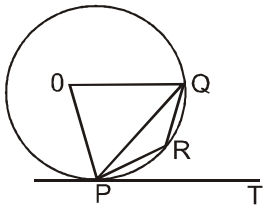
(A) 22 (B) 25 (C) 28 (D) 30

10. From a point on a bridge across a river, the angles of depression of the banks on opposite sides of the river are 30^o and 45^o, respectively. If the bridge is at a height of 3 m from the banks, find the width of the river.

(A) $2(\sqrt{3}+1)$m (B) $(\sqrt{3}+1)$m

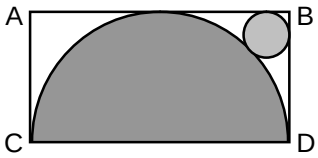
(C) $3(\sqrt{3}+1)$m (D) None of these

11. In the figure, PQ is a chord of a circle with centre O and PT is the tangent at P such that $\angle QPT = 70^o$. Then the measure of $\angle PRQ$ is equal to :



(A) 135^o (B) 150^o (C) 120^o (D) 110^o

12. The figure shows the rectangle ABCD with a semicircle and a circle inscribed inside in it as shown. What is the ratio of the area of the circle to that of the semicircle ?



(A) $\left(\sqrt{2}-1\right)^2 : 1$ (B) $2\left(\sqrt{2}-1\right)^2 : 1$

(C) $\left(\sqrt{2}-1\right)^2 : 2$ (D) None of these

13. The ratio of base radius and height of a cone is 3 : 4. If the cost of smoothening the curved surface area at 5 rupees/sq. cm is Rs.11550, then the volume of liquid in it is :

(A) 12936 cm^3 (B) 12693 cm^3 (C) 12653 cm^3 (D) 12542 cm^3

14. The chance that a non leap year contains 53 Saturdays is :

(A) 2/7 (B) 1/7 (C) 2/365 (D) 1/365

15. If S_1, S_2, S_3 are the sum of n, 2n, 3n terms of an A.P. find the value of $3(S_2 - S_1)$.

(A) S_2 (B) S_1 (C) S_3 (D) S_1S_2

16. The LCM of two numbers is 14 times their HCF. The sum of LCM and HCF is 600. If one number is 280, then the other number is :

(A) 40 (B) 60 (C) 80 (D) 100

17. If $x^2 - 3x + 1 = 0$ then find the value of $\left(x^7 + \frac{1}{x^7}\right)$

(A) 1000 (B) 946 (C) 846 (D) 843

18. How many natural numbers satisfy the equation $34x + 51y = 126$?

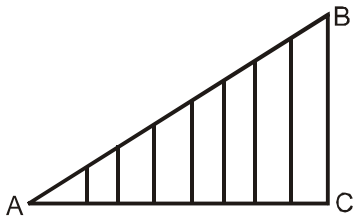
(A) 1 (B) 2 (C) 3 (D) none

19. If $x \sin 30^o.\cos^2 45^o = \frac{\cot^2 30^o.\sec 60^o.\tan 45^o}{\text{cosec}^2 45^o.\text{cosec}\, 30^o} - \frac{\sec 0^o.\cot 90^o}{\text{cosec}\, 90^o}$ then the value of 'x' is :

(A) 16 (B) 10

(C) 6 (D) does not exist

20. Side AC of right triangle ABC is divided into 8 equal parts. Seven line segments parallel to BC are drawn to AB from the point of division. If BC = 10, then the sum of the lengths of the seven line segments is



(A) cannot be found from the given information (B) 33
(C) 34 (D) 35

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^{th} term of an A.P. is 7 and 8^{th} 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 30º 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 30º m (B) 15 cos 30º m (C) 15 tan 30º m (D) 15 sec 30º 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) 2 ab (D) 4 ab

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 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 : π (C) π : 5 (D) 6 : π

29. In a toss of four fair coins, the number of outcomes in which Head comes at most two times.

(A) 5 (B) 6 (C) 3 (D) 11

30. AD is bisector of ∠A of ΔABC, which meets side BC at D. If BC = K cm, CA = ℓ 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. For the product n(n + 1) (2n + 1), n ∈ N, which one of the following is not necessarily true ?
(A) it is even
(B) divisible by 3
(C) Divisible by the sum of the square of first n natural numbers
(D) Never divisible by 237

32. If the zeroes of the polynomial $f(x) = x^3 - 3px^2 + qx - r$ are (m – d), m, (m + d), then

(A) $2p^3 = pq - r$ (B) $2p^3 = pq + r$ (C) $p^3 = pq - r$ (D) $p^3 = pq + r$

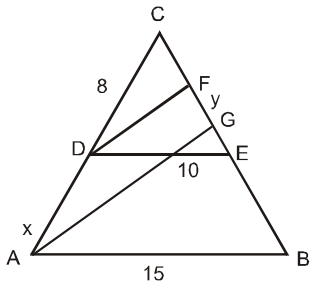
33. Sum of the digit of a two digit number is 9. The number obtained by interchanging the digit becomes greater than the given number by 27, the number is :

(A) 81 (B) 45 (C) 36 (D) 27

34. If $\text{cosec } x - \cot x = \frac{1}{3}$, where $x \neq 0$, then the value of $\cos^2 x - \sin^2 x$ is :

(A) $\frac{16}{25}$ (B) $\frac{9}{25}$ (C) $\frac{8}{25}$ (D) $\frac{7}{25}$

35. In the figure DF || AG, DE || AB, AB = 15, CD = 8, AD = x, DE = 10, FG = y and CG = 6. The ratio x : y equal to :



(A) 1 : 2 (B) 1 : 3 (C) 2 : 1 (D) 3 : 2

36. The mean of the six numbers is 43. If one of the number is excluded, the mean of the remaining no. is 41. Then the excluded number is :

(A) 83 (B) 53 (C) 12 (D) 10

37. Let sin θ and cos θ be roots of the equation $x^2 - px + q = 0$. Find the value of $p^2 - 2q$.

(A) 1 (B) 2 (C) 3 (D) 4

38. The interior angles of a polygon are in arithmetic progression. The smallest angle is 120º and the common difference is 5º. Then the number of sides of the polygon is :

(A) 9 or 16 (B) 9 (C) 16 (D) 13

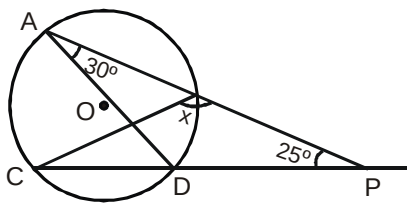
39. The vertices of the triangle ABC are respectively A (–1, 2), B (3, 4) and C (–5, 2). If D is the mid point of BD, then length of AD will be :

(A) 4 (B) 3 (C) 2 (D) 1

40. If from the top of a cliff 100 m high, the angles of depression of two ships out at sea are 60º and 30º, then the distance between the ships is approximately.

(A) 173 m (B) 346 m (C) $\frac{200}{\sqrt{3}}$ m (D) $\frac{200\sqrt{3}}{3}$ m

41. In the given figure, the value of x is :



(A) 125º (B) 120º (C) 145º (D) 135º

42. If area of a sector of circle bounded by an arc of length 5p cm is equal to 20p cm^2 then its radius (in cm) is :

(A) 12 cm (B) 16 cm (C) 8 cm (D) 10 cm

43. A house with a flat roof is rectangular in shape, 10 m wide, 13 m long and 5 m high. It is to be painted inside and outside, and on the ceiling, but not on the roof or floor. The total area in sq. m. to be painted is :

(A) 360 (B) 460 (C) 490 (D) 590

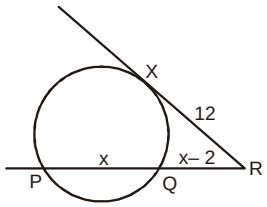
44. A bag contains 20 balls of different colours. The probability of drawing a black ball is 4/5 then number of black balls in the bag is :

(A) 14 (B) 15 (C) 16 (D) 20

45. Give two similar triangles one of which has twice the perimeter of the other, by what factor is the area of the larger triangle bigger than the smaller ?

(A) 2 (B) 4 (C) $\sqrt{2}$ (D) $2\sqrt{2}$

46. PQ is a chord of a circle. The tangent XR at X on the circle cuts PQ produced at R. If XR = 12 cm, PQ = x cm, QR = x – 2 cm, then x in cm is :

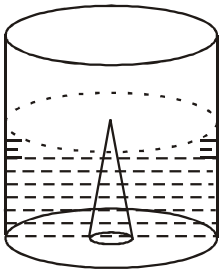


(A) 6 (B) 7 (C) 10 (D) 14

47. Radius of a circular field is 54 m. There is a 7 m wide road outside the field along its boundary. Find the area of the road.

(A) 2560 m^2 (B) 2530 m^2 (C) 2430 m^2 (D) 2460 m^2

48. A right circular cone of diameter k cm and height 12 cm rests on the base of a right circular cylinder of radius k cm (their bases lie in the same plane, as shown). The cylinder is filled with water to a height of 12 cm. If the cone is then removed, the height to which the water will fall, is :



(A) 1 cm (B) 2 cm (C) 3 cm (D) 4 cm

49. 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

50. In any quadrilateral ABCD, find the value of sin (A + B) + sin (C + D)

(A) 0 (B) 1 (C) 2 (D) –1

PART - II (PHYSICS)

SECTION – 1

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

51. An institute uses 20 tubelights of 60 W each, 15 fans of 40 W each and 2 table lamps of 100 W each for 5 hours a day. How many units of electricity are used in the month of April ?

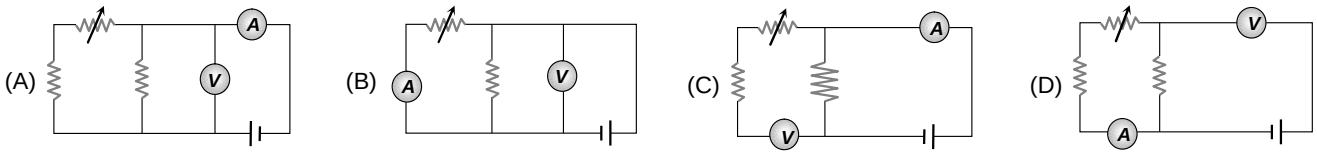
(A) 250 kWh (B) 300 kWh (C) 200 kWh (D) 1000 kWh

52. Magnetic lines of force determines :

(A) the shape of the magnetic field (B) only the direction of the magnetic field

(C) only the relative strength of the magnetic field (D) both the direction and the relative strength of the magnetic field

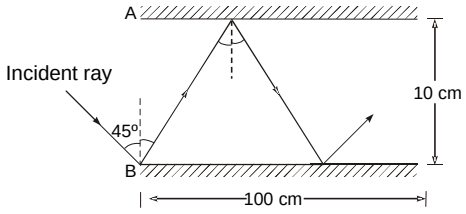
53. Which of the following setups can be used to verify Ohm's law :



54. What will be the magnitude of e.m.f. induced in a 200 turns coil with cross section area 0.16 m^2 ? The magnetic field through the coil changes from 0.10 Wb m^{-2} to 0.30 Wb m^{-2}, at a uniform rate over a period of 0.05 s :

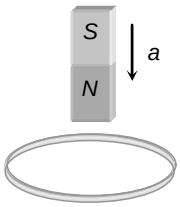
(A) 128V (B) 130V (C) 118 V (D) 132V

55. 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 45º. Find the number of times this rays is reflected from mirror A, before coming out of system of parallel mirrors :



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

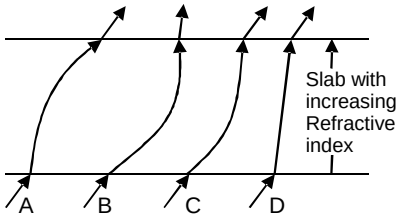
56. A metallic ring is lying on the floor of a room. When the north pole of a magnet is brought near to it, the induced current in the ring with respect to the magnet will be :



(A) In anticlockwise direction (B) In clockwise direction

(C) No current is induced in the ring (D) May be clockwise or anticlockwise

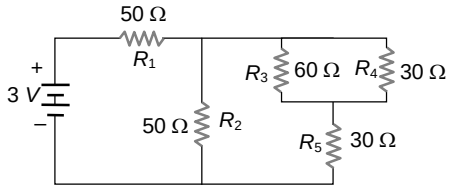
57. A ray of light enters a slab of material with increasing refractive index. Four possibilities of the trajectory of the ray are shown below.



The correct choice is :

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

58. In circuit shown below, the resistances are given in ohms and the battery is assumed ideal with emf equal to 3 volt. The voltage across the resistance R_4 is :



(A) 0.4 V (B) 0.6 V (C) 1.2 V (D) 1.5 V

59. The force between two charges 0.06 m apart is 5 N. If both charges are moved towards each other by 0.01 m, then the force between them will become :

(A) 7.20 N (B) 11.25 N (C) 22.50 N (D) 45.00 N

60. An object of height 7.5 cm is placed in front of a convex mirror of radius of curvature 25 cm at a distance of 40 cm. The height of the image should be:

(A) 2.3 cm (B) 3.40 cm (C) 1 cm (D) 0.8 cm

61. Two particles X and Y having equal charges, after being accelerated through the same potential difference, they enter in region having uniform magnetic field and moves in circular paths of radii R_1 and R_2 respectively. The ratio of the mass of X to that of Y is -

(A) $(R_1/R_2)^{1/2}$ (B) R_1/R_2 (C) $(R_1/R_2)^2$ (D) R_1R_2

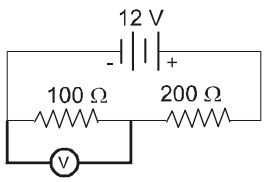
62. The temperature coefficient of resistance for a wire is 0.00125 /ºC at 0ºC. At 300 *K* its resistance is 1*ohm*. The temperature at which the resistance becomes 2 *ohm* is. Assume Linear variation.

(A) 1154 *K* (B) 1100 *K* (C) 1400 *K* (D) 1127 *K*

63. A rectangular block of glass of refractive index μ and thickness d is placed over an ink dot made on a piece of paper lying on a table. When viewed from above, the dot will appear to be raised by an amount given by :

(A) $(\mu + 1)\frac{d}{\mu}$ (B) $(\mu - 1)\frac{d}{\mu}$ (C) $\frac{\mu d}{\mu + 1}$ (D) $\frac{\mu d}{\mu - 1}$

64. In the circuit shown in figure, the reading of the voltmeter V will be : (consider the voltmeter to be ideal)



(A) 4 V (B) 2 V (C) 6 V (D) 3 V

65. Induced electromotive force in a coil does not depends on :

(A) number of turns in the coil

(B) intensity of the magnetic field

(C) relative speed between coil and the magnet

(D) resistance of the coil

PART - III (CHEMISTRY)

SECTION – 1

- 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 thermometer is inserted into a beaker filled with ice at 0ºC. The beaker is heated slowly. The temperature does not rise for some time. This is because -

(A) ice is very cold

(B) heat was used for changing ice at 0ºC to water at 0ºC

(C) the density of water is more than ice

(D) the density of water is less than the ice

67. An isotone of $^{76}_{32}Ge$ is -

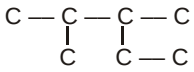
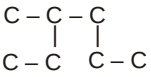
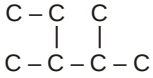
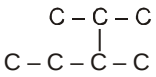
(A) $^{77}_{32}Ge$ (B) $^{77}_{33}As$ (C) $^{77}_{34}Se$ (D) $^{79}_{34}Se$

68. Oxidation is a process which involves :

(A) Addition of oxygen (B) Removal of hydrogen

(C) Loss of electrons (D) All are correct

69. Which of the following carbon chains is different from the others ?

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

70. In the equation $NaOH + HNO_3 \longrightarrow NaNO_3 + H_2O$ nitric acid is acting as -

(A) an oxidising agent (B) an acid

(C) a nitrating agent (D) a dehydrating agent

71. What is the decreasing order of reactivity of the following metals ?

Na, Al, K, Cu, Ag, Fe

(A) Na > K > Al > Cu > Ag > Fe (B) K > Na > Al > Cu > Fe > Ag

(C) K > Na > Al > Fe > Cu > Ag (D) K > Na > Al > Fe > Ag > Cu

72. In the reaction $xPb(NO_3)_2 \rightarrow yPbO + zNO_2 + O_2$ x,y and z are -

(A) 1,1,2 (B) 2,2,4 (C) 1,2,4 (D) 4,2,2

73. A balanced chemical equation is in accordance with -

(A) Avogadro's law (B) law of constant proportions

(C) law of conservation of mass (D) law of gaseous volumes

74. Electrolysis of water is a decomposition reaction. The mole of hydrogen and oxygen gases liberated during electrolysis of water is:

(A) 1 : 1 (B) 2 : 1 (C) 4 : 1 (D) 1 : 2

75. If pH of solution is 13, means that it is -

(A) weakly acidic (B) weakly basic (C) strongly acidic (D) strongly basic

76. Which of the following statements is incorrect ?

(A) An indicator is a substance that gives different colours in different media.

(B) Litmus is soluble in ethanol.

(C) Indicators are strong acids or strong bases.

(D) Litmus is a vegetable extract that can be soaked into paper.

77. Steps of a metallurgical process are -

(A) concentration, oxidation, refining (B) concentration, reduction, refining

(C) concentration, and refining (D) washing and reduction

78. 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

79. Which of the following is combination reaction ?

(A) $Fe + S \longrightarrow FeS$ (B) $2HgO \longrightarrow 2Hg + O_2$

(C) $Zn + \text{dil. } H_2SO_4 \longrightarrow ZnSO_4(aq.) + H_2$ (D) None of these

80. The IUPAC name of compound $CH_3–CH_2–\underset{\displaystyle CH_3}{\underset{|}{CH}}–COOH$ is :

(A) Butan-3-oic acid (B) Butan-2-oic acid

(C) 3-Methylbutanoic acid (D) 2-Methylbutanoic acid

PART - IV (MENTAL ABILITY)

SECTION – 1

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

Direction (81 to 83) Find the missing term.

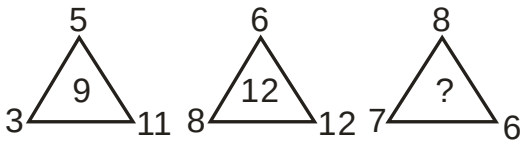
81. 2, 6, 14, 26, ?

(A) 92 (B) 54 (C) 44 (D) 42

82. LRX, DJP, VBH, NTZ, ?

(A) ELS (B) FMR (C) GKS (D) FLR

83.



(A) 15 (B) 21 (C) 2 (D) 6

84. In a certain code **CONFUSED** is written as **EMNBEFTV** how will you encode **SECLUDED** ?

(A) MDFTCDCT (B) KBDRCDCT (C) RDBKEFEV (D) KBDREFEV

85. Five boys Rakesh, Anil, Mahesh, Suresh and Manjit are sitting in a circle

(I) Anil is sitting in between Rakesh and Suresh.

(II) To Manjit's right Suresh is seated

Who is seated to Mahesh's left ?

(A) Anil (B) Suresh (C) Manjit (D) Rakesh

Directions (86) :

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.

86. Statements : All hill stations have a sun-set point. X is a hill station.

Conclusions : I. X has a sun-set point.

II. Places other than hill stations do not have sun-set points.

(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

Directions (87) :

Read following information carefully and answer the question given below it :

(i) A and B are good in Biology & Chemistry.

(ii) A & C are good in Biology & Physics.

(iii) C, D & E are good in Physics & History.

(iv) C & E are good in Physics & Mathematics.

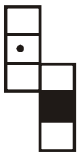
(v) D & B are good in Chemistry & History.

87. Who is good in Physics, History & Mathematics but not in Biology ?

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

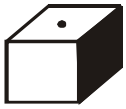
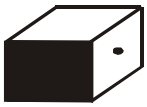
88. Pankaj met his friend three days ago. He told his friend that he had his last exam five days later. He met his friend again, three days after the exam. 6 days after he met his friend after the exam they left for a vacation. The day on which they left for a vacation is Saturday. What is today ?

(A) Tuesday (B) Monday (C) Saturday (D) Wednesday

89. 

(X)

Choose from the alternatives, the boxes that will be formed when figure (X) is folded ?

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

90. How many triangles are there in the figure below?

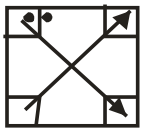
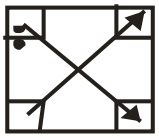


(A) 5 (B) 6 (C) 8 (D) 10

Directions : (91) In each of the following question, a figure marked (X) is followed by four figures (A), (B), (C) and (D) which show the possible water images of figure (X). Choose one out of these four figures which shows the correct water image of the figure (X).

91. 

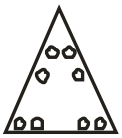
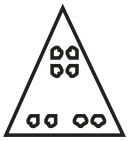
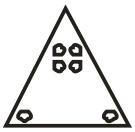
(X)

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

Directions : (92) A sheet has been folded in the manner as shown in X, Y and Z respectively and punched. You have to choose from the alternatives how it will look when unfolded.

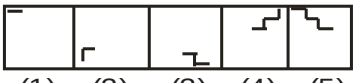
92. 

X Y Z

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

Directions : (93) Study the problem figures marked 1, 2,3,4 and 5 carefully and try to establish the relationship between them. From the answer figures marked A, B, C and D, pick out the figure which most appropriately completes the series.

93. **Problem Figure**



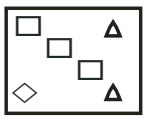
(1) (2) (3) (4) (5)

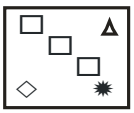
(A)  (B)  (C)  (D) 

Directions : (94) The second figure in the first part of the problem figure bears a certain relationship to the first figure similarly one of the figure in answer figures bears the same relationship to the first figure in the second part. You have to select the figure from the set of answer figures which would replace the sign of questions mark.

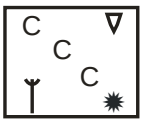
94.



(A) 

(B) 

(C) 

(D) 

95. 1, 3, 7, 25, 103, ?

(A) 526 (B) 521 (C) 515 (D) 509

96. E16V, G8T, C12X, ?, U105F

(A) K30P (B) J30P (C) K6P (D) none of these

97.

6	8	?
9	3	13
10	14	1

(A) 11 (B) 9 (C) 7 (D) 5

98. If **DANGER** is coded as **GENDAR** then **MOTION** will be coded as :

(A) IOTMON (B) IOTMNO (C) IONTON (D) IOTMNO

Directions (99) : *Study the given information carefully and answer the questions that follow :*

Seven friends Kamla, Manish, Rohit, Amit, Gaurav, Pritam and Priya are sitting in a circle. Kamla, Manish, Rohit, Amit, Pritam and Priya are sitting at equal distances from each other.

Rohit is sitting three places right of Pritam, who is sitting one place right of Amit. Kamla forms and angle of 90 degrees from Gaurav and an angle of 120 degrees from Manish. Manish is just opposite Priya and is sitting on the left of Gaurav.

99. Who is the only person sitting between Rohit and Manish ?

(A) Pritam (B) Amit (C) Gaurav (D) Kamla

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 clothes are marbles. Some marbles are bags.

Conclusions : I. No cloth is a bag. II. All marbles are bags.

III. Some bags are clothes. IV. No marbles is a cloth.

(A) Only either I or IV follows (B) Only either I or II follows

(C) None follows (D) Only either I or III follows