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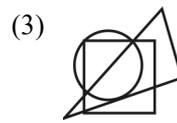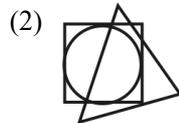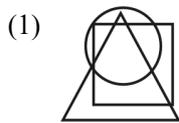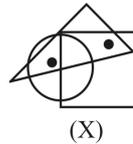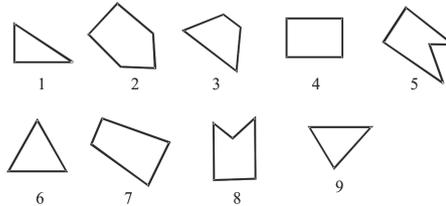## PART - I, IQ (MENTAL ABILITY)

This section contains **20 Multiple Choice Question.** Each question has four choices (1), (2), (3) and (4) out of which **ONLY ONE** is correct.

1. Select the figure which satisfies the same conditions of placement of the dots as in Figure - X.

(X)

(1)   (2)   (3)   (4)
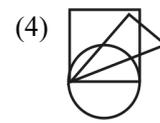
2. Group the given figures into three classes using each figure only once.

(1) 7,8,9 ; 2,4,3 ; 1,5,6   (2) 1,3,2 ; 4,5,7 ; 6,8,9   (3) 1,6,8 ; 3,4,7 ; 2,5,9   (4) 1,6,9 ; 3,4,7 ; 2,5,8

3. In each of the following question, a number series is given with one term missing. Choose the correct alternative that will continue the same pattern and replace the question mark in the given series.
   2, 3, 5, 7, 11, 13, ?,19 ,23.

   (1) 24   (2) 2   (3) 17   (4) 6

4. In each of the following question, a number series is given with one term missing. Choose the correct alternative that will continue the same pattern and replace the question mark in the given series.
   1 ,8 ,27 ,64 ,?,216 ,343.

   (1) 91   (2) 37   (3) 125   (4) 152

5. Arrange the words given below in a meaningful sequence.
   1. Elephant   2. Cat
   3. Mosquito   4. Tiger
   5. Whale

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

6. Find the missing term (?)

C	G	L
F	?	O
H	L	Q

   (1) M   (2) N   (3) J   (4) K

7. If 1ˢᵗ October is Sunday, than 1ˢᵗ November will be

(1) Monday   (2) Tuesday   (3) Wednesday   (4) Thursday

8. In questions given below except one alterative other alternatives are alike in a certain way. Select the odd alternative from the given options.

(1) Calculator   (2) Computer   (3) Piano   (4) Typist

9. In each of the following questions, three of the given four are alike in a certain way and form a group. Which is the one that does not belong to that group in the following questions?

(1) 43   (2) 53   (3) 63   (4) 73

10. In the following question, numbers are written with a specific rule. According to that rule which alternative will be in place of question mark ?
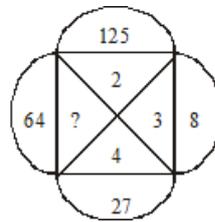

(1) 5   (2) 0   (3) 1   (4) 2

11. What should come next in the following letter series?

P Q R S T A B C D E P Q R S A B C D E P Q R S A B C D P Q

(1) R   (2) T   (3) A   (4) B

12. If DOOR = 25, LOWER=37, TOWER=18, then OVER = ?

(1) 81   (2) 45   (3) 60   (4) 06

13. You go North, turn right, then right again and then go to left. In which direction are you facing now?

(1) North   (2) South   (3) East   (4) West

14. Ashish leaves his house at 20 minutes to seven in the morning reaches Kunal's house in 25 minutes, they finish their breakfast in another 15 minutes and leave for their office which takes another 35 minutes. At what time do they leave Kunal's house to reach their office ?

(1) 7:40 a.m.   (2) 7:20 a.m.   (3) 7:45 a.m.   (4) 8:15 a.m.

15. In the following question, a statement/group of statements is given followed by some conclusions. Without resolving anything yourself choose the conclusion which logically follows from the given statements.

Statements :
All men are dogs.
All dogs are cats.

Conclusions :
I. All men are cats.
II. All cats are men.

(1) if only conclusion I follows.   (2) if only conclusion II follows.

(3) if either conclusion I or II follows.   (4) if neither conclusion I nor II follows.

16. If × means −, + means ÷, − means × and ÷ means +, then 15 − 2 ÷ 900 + 90 × 100 = ?

(1) 190   (2) 90

(3) 0   (4) None of these

17. Choose the correct water image of problem figure from the options given in the answer figures.
Problem Figure

(1)   (2)

(3)   (4)
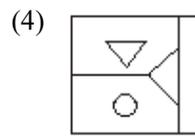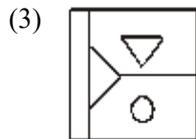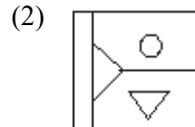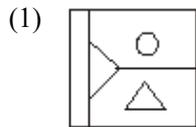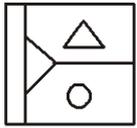
18. A dice is thrown thrice and its three positions are given below. Find the alphabet opposite to P?
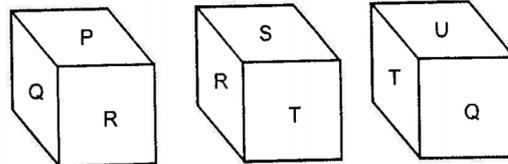
(1) R   (2) T   (3) Q   (4) S

19. If,
' P @ Q' means 'P is wife of Q'
' P # Q' means 'P is brother of Q'
' P $ Q' means 'P is father of Q'
' P − Q' means 'P is daughter of Q'
If A − B $ M $ K, then how is A related to K ?

(1) A is mother of K   (2) A is sister of K

(3) A is father's sister of K   (4) A is daughter of K

20. In the adjoining figure, if the centres of all the circles are joined by horizontal and vertical lines, then find the number of squares that can be formed.
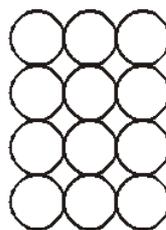
(1) 6   (2) 7   (3) 8   (4) 10

PART - II, SECTION-A : PHYSICS

This section contains **20 Multiple Choice Question.** Each question has four choices (1), (2), (3) and (4) out of which **ONLY ONE** is correct.

21. The total resistance between x and y in ohms is -

(1) 1Ω (2) 4Ω (3) $\dfrac{4}{3}\Omega$ (4) $\dfrac{2}{3}\Omega$

22. Data for various electrical appliances is given in the table below.

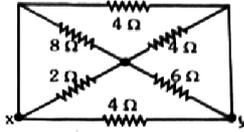| Appliance	Power (W)	Potential difference (V)	Current (A)
Car headlamp	48	12	4
TV	240	240	
Hairdryer		240	2
Iron	960	240	
Kettle		240	10

The power for the hairdryer and current for the iron are, respectively :−

(1) 480W ; 0.25 A   (2) 240W ; 4A   (3) 480W ; 4A   (4) 960W ; 2A

23. A piece of wire is stretched to double its length. Then its new resistance

(1) Will be half the original value   (2) Will be double the original value

(3) Will be quadrupled   (4) Will be decrease by four times

24. Two lamps, one rated 40 W - 220 V and the other 60 W - 220 V are connected in parallel to electric supply at 220V. Energy consumed by 60 W bulb in 1 hour

(1) 40 Wh   (2) 60 Wh   (3) 90 Wh   (4) 45 Wh

25. A 12 V battery is connected to an arrangement of resistances as shown in figure. The total current flowing in the circuit is
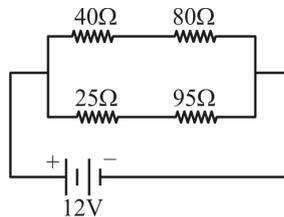
(1) 0.3 A   (2) 0.5 A   (3) 0.2 A   (4) 0.6 A

26. The heating element of an electric heater should be made with material which has

(1) high specific resistance and high melting point.

(2) high specific resistance and low melting point.

(3) low specific resistance and low melting point.

(4) low specific resistance and high melting point.

27. Which of the following networks yields minimum effective resistance between A and B ?

(1)

(2)

(3)

(4)
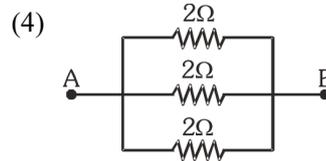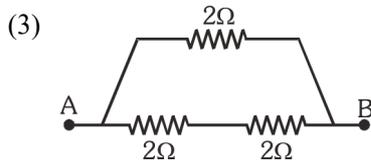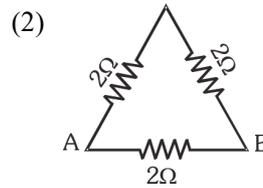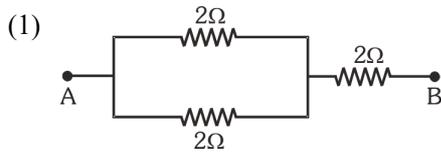
28. A positively charged particle is moving in a uniform magnetic field with the initial velocity of the particle perpendicular to the field. The path followed by the charged particle is :

(1) Linear path   (2) Circular path   (3) Parabolic path   (4) Elliptical path

29. Which of the following correctly describes the magnetic field near a long straight current-carrying wire ?

(1) The field consists of straight lines perpendicular to the wire.

(2) The field consists of straight lines parallel to the wire.

(3) The field consists of radial lines originating from the wire.

(4) The field consists of concentric circles centered on the wire.

30. Which of the following describes the common domestic power supplied in India?

(1) 220 V, 100 Hz

(2) 110 V, 100 Hz   (3) 220 V, 50 Hz   (4) 110 V, 50 Hz

31. Which of the following statements is true ?

(1) A convex lens has 4 dioptre power having a focal length 0.25 m.

(2) A convex lens has -4 dioptre power having a focal length 0.25 m.

(3) A concave lens has 4 dioptre power having a focal length 0.25 m.

(4) Both (2) and (3).

32. Which of the following statements is correct regarding the propagation of light of different colours of white light in air ?

(1) red light moves fastest

(2) blue light moves faster than green light

(3) all the colours of the white light move with the same speed

(4) yellow light moves with the mean speed as that of the red and the violet light

33. A body of mass 30 kg stands on weighing machine lying on the floor of a lift. What will be the weight of the body when lift moves downward with an acceleration of 2.2 m/sec^2 (Take g = 9.8 m/s^2)

(1) 300 N   (2) 360 N   (3) 228 N   (4) Zero

34. A bullet of mass 0.06 kg is horizontally fired with a velocity 100m/sec from a gun of mass 10kg. What will be recoil speed of Gun

   (1) 100 m/sec   (2) 500 m/sec   (3) 0.5 m/sec   (4) 0.6 m/sec

35. A stone is dropped from a cliff. Its speed after it has fallen 400 m is

   (1) 9.8 m/s   (2) 88.4 m/s   (3) 19.6 m/s   (4) 98 m/s

36. Two fishes are 1 m apart underwater [fig.1(a)]. The gravitational force between them is F_1. They jump above the surface of water [fig.1(b)] keeping the same distance (i.e.,1m) between them. The new gravitational force between them is F_2. The relationship between F_1 and F_2 is
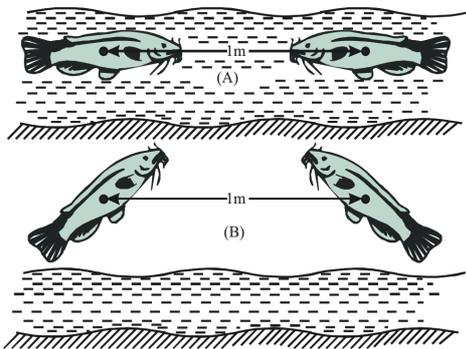
   (1) $F_1 > F_2$ (2) $F_1 < F_2$ (3) $F_1 = F_2$ (4) $F_1 : F_2 = 1 : 2$

37. A brick was lifted from the ground to a height 'h' in 3 different ways. In which case was the potential energy maximum ?
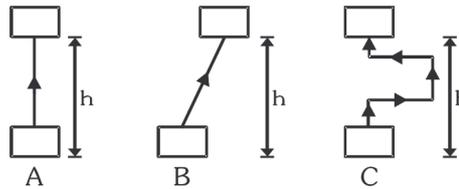
   (1) Case A   (2) Case B   (3) Case C   (4) Equal in all 3 cases

38. A 10 mm long awl pin is placed vertically in front of a concave mirror. A 5 mm long image of the awl pin is formed at 30 cm in front of the mirror. The focal length of this mirror is

   (1) – 30 cm   (2) – 20 cm   (3) – 40 cm   (4) – 60 cm

39. A convex mirror has a focal length 15 cm. A real object placed at a distance 15 cm in front of it from the pole, produces an image at :

   (1) 7.5 cm   (2) 30 cm   (3) infinity   (4) 15 cm

40. In order to obtain magnification of – 1.5 with a concave mirror of focal length 16 cm, the object will have to be placed at a distance

   (1) between 6 cm and 16 cm   (2) between 32 cm and 16 cm

   (3) between 48 cm and 32 cm   (4) beyond 64 cm

SECTION-B : CHEMISTRY

This section contains **20 Multiple Choice Question.** Each question has four choices (1), (2), (3) and (4) out of which **ONLY ONE** is correct.

41. See the figure of sublimation process shown below which follows. There are some parts marked as A, B and C.
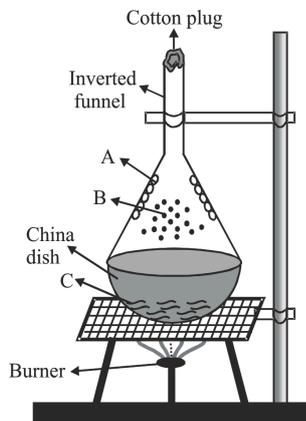
Identify the sublimate in the given figure.

(1) A   (2) B   (3) C   (4) Both (2) and (3)

42. The evaporation of water increases under the following conditions :

(1) increase in temperature, decrease in surface area

(2) increase in surface area, decrease in temperature

(3) increase in surface area, rise in temperature

(4) increase in temperature, increase in surface area, addition of commonsalt

43. How much water should be added to 20 g of sugar to obtain 20% sugar solution?

(1) 80 g   (2) 20 g   (3) 120 g   (4) None of the above

44. Tincture of iodine has antiseptic properties. This solution is made by dissolving

(1) Iodine in potassium iodide   (2) Iodine in vaseline

(3) Iodine in water   (4) Iodine in alcohol

45. Which of the following has maximum number of atoms?

(1) 18g of H_2O (2) 18g of O_2 (3) 18g of CO_2 (4) 18g of CH_4

46. Carbon and oxygen react in the ratio 3 : 8 by mass. What weight of carbon should be used to react completely with 40 g of oxygen?

(1) 10 g   (2) 2 g   (3) 15 g   (4) 25 g

47. The isotopes of hydrogen which have same number of electrons, protons and neutrons is

(1) Protium   (2) Deuterium   (3) Tritium   (4) All

48. In the reaction given below, a, b, c and d respectively are :
$$aFe_2O_3 + bH_2 \rightarrow cFe + dH_2O$$

(1) 1, 1, 2, 3   (2) 1, 1, 1, 1   (3) 1, 3, 2, 3   (4) 1, 2, 2, 3

49. Which of the following is not an example of decomposition reaction?

(1) $CaCO_3(s) \rightarrow CaO(s) + CO_2(s)$

(2) $Ca(OH)_2(s) \rightarrow CaO(s) + H_2O(\ell)$

(3) $Fe(s) + H_2O(g) \rightarrow Fe_3O_4(s) + H_2(g)$

(4) $2KClO_3(s) \rightarrow 2KCl(s) + 3O_2(g)$

50. Which of the following statements about the given reaction is/are not correct?

$Fe_2O_3 + 3CO \longrightarrow 2Fe + 3CO_2$
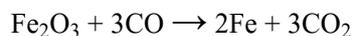
I. Fe_2O_3 is getting oxidised to Fe.

II. Fe_2O_3 is acting as a reducing agent.

III. CO is acting as a reducing agent.

IV. CO is getting reduced to CO_2.

(1) III only

(2) I, II and IV

(3) III and IV only

(4) I and III only

51. Study the given experimental set-up and answer the following questions
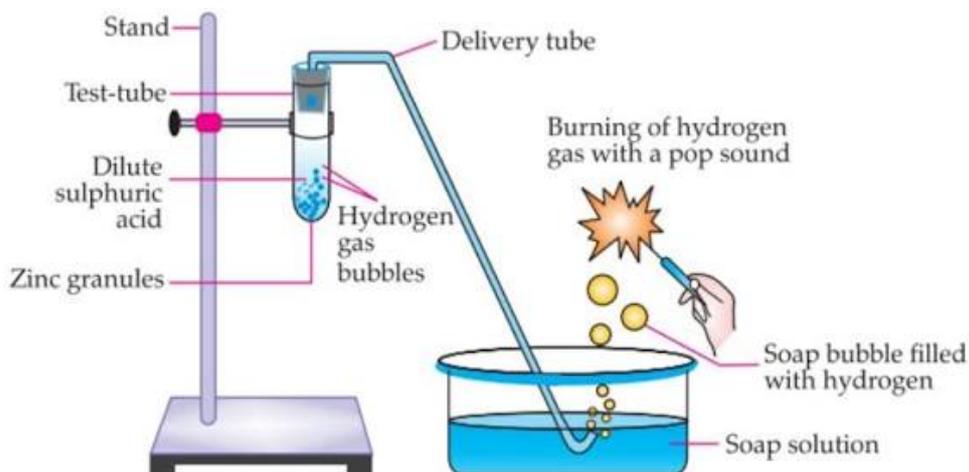
The above experimental set up shows reaction between metal and

(1) Acid

(2) Metal carbonate

(3) Metal hydrogen carbonate

(4) Metal oxide

52. The products of reaction between zinc and sodium hydroxide solution are:

(1) sodium carbonate and water

(2) Sodium zincate and hydrogen

(3) zinc hydroxide and hydrogen

(4) zinc carbonate and hydrogen

53. Identify the correct representation of reaction occurring during chloralkali process.

(1) $2NaCl(l) + 2H_2O(l) \longrightarrow 2NaOH(l) + Cl_2(g) + H_2(g)$

(2) $2NaCl(aq) + 2H_2O(aq) \longrightarrow 2NaOH(aq) + Cl_2(g) + H_2(g)$

(3) $2NaCl(aq) + 2H_2O(l) \longrightarrow 2NaOH(aq) + Cl_2(aq) + H_2(aq)$

(4) $2NaCl(aq) + 2H_2O(l) \longrightarrow 2NaOH (aq) + Cl_2(g) + H_2(g)$

54. Match the entries in Column-I with appropriate ones in Column-II.

Column-I		Column-II	
(A)	Duralumin	(p)	Sn + Pb
(B)	Bronze	(q)	Al + Cu + Mg + Mn
(C)	Amalgam	(r)	Cu + Sn
(D)	Solder	(s)	Cu + Hg

(1) A - r, B - s, C - p, D - q

(2) A - q, B - r, C - s, D - p

(3) A - r, B - p, C - s, D - q

(4) A - s, B - p, C - q, D - r

55. Assertion : Zinc is used in galvanisation of iron

Reason : Galvanisation increases the life of iron articles by protecting them from rusting.

(1) Both A and R are individually true and R is the correct explanation of A:

(2) Both A and R are individually true but R is not the correct explanation of A.

(3) A is true but R is false

(4) A is false but R is true.

56. Match column-I with column-II and select the correct option using the given codes -

	Column-I		Column-II
(a)	A metal that forms amphoteric oxides	(i)	Ga
(b)	A metal which melts when kept on our palm	(ii)	Au
(c)	A metal that gives H_2 gas with very dilute nitric acid	(iii)	Al
(d)	A metal which can not displace hydrogen from acids	(iv)	Mg

(1) a−(ii), b−(i), c−(iii), d−(iv)

(2) a−(iii), b−(i), c−(iv), d−(ii)

(3) a−(iv), b−(ii), c−(iii), d−(i)

(4) a−(iii), b−(ii), c−(i), d−(iv)

57. The IUPAC name of CCl_3-CHO is

(1) Chloral

(2) 1,1,1-trichloroethanol

(3) 2,2,2-trichloroethanal

(4) Trichloroacetalde-hyde

58. Which of the following is used to oxidise ethanol to ethanoic acid?

(1) Alkaline $KMnO_4$

(2) Conc. H_2SO_4

(3) Acidified $K_2Cr_2O_7$

(4) All of above

59. An example of soap is

(1) CH_3COONa

(2) CH_3ONa

(3) $C_{17}H_{35}COONa$

(4) $C_{17}H_{35}COOC_2H_5$

60. The average atomic mass of sample X is 23.04u. The % ages of $^{23}_{11}X$ and $^{24}_{11}X$ in it are :

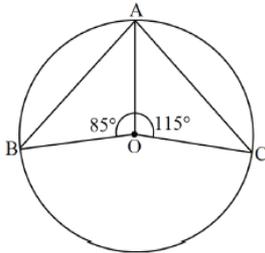(1) 95% and 5%   (2) 94% and 6%   (3) 96% and 4%   (4) 93% and 7%

SECTION-C : MATHEMATICS

This section contains **20 Multiple Choice Question.** Each question has four choices (1), (2), (3) and (4) out of which **ONLY ONE** is correct.

61. In the given figure, O is the centre of the circle. If ∠AOD = 140° and ∠CAB = 50°, the value of ∠EDB is:
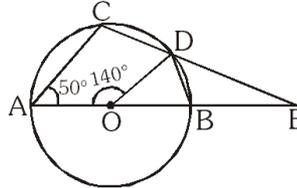
    (1) 30°   (2) 50°   (3) 60°   (4) 70°

62. In the figure, O is the centre of the circle with ∠AOB = 85° and ∠AOC = 115°, Then ∠BAC is:

    (1) 85°   (2) 80°   (3) 115°   (4) 100°

63. Three cubes of metal whose edges are 4 cm, 3 cm and 5 cm are melted and made a new cube. Select the option that shows correctly the diagonal of new cube.

    (1) 6 cm   (2) $6\sqrt{2}$ cm   (3) $6\sqrt{3}$ cm   (4) 9 cm

64. The perimeter of a rhombus is 52 cm and one of its diagonals is 24 cm. The length of the other diagonal is

    (1) 24 cm   (2) 10 cm   (3) $2\dfrac{1}{6}$ cm   (4) 12 cm

65. **Assertion (A) :** Abscissa of point is positive in I and IV quadrant.

    Reason (R) : If (x + 2, 4) = (5, y − 2) then (x, y) is (3, 6).

    (1) Both Assertion (A) and Reason (R) are true and Reason (R) is the correct explanation of Assertion (A).

    (2) Both Assertion (A) and Reason (R) are true but Reason (R) is not the correct explanation of Assertion (A).

    (3) Assertion (A) is true but Reason (R) is false.

    (4) Assertion (A) is false but Reason (R) is true.

66. In the given figure, if ∠GED = 135° and AB ∥ CD, EF ⊥ CD, ∠AGE will be:
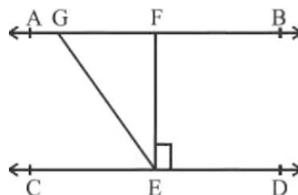
    (1) 120°   (2) 90°   (3) 135°   (4) 140°

67. Which of the following is equal to x^2?

(1) $x^{\frac{12}{7}} - x^{\frac{5}{7}}$

(2) $\sqrt[12]{(x^4)^{\frac{1}{3}}}$

(3) $\left(\sqrt{x^3}\right)^{\frac{2}{3}}$

(4) $x^{\frac{2}{4}} \times x^{\frac{6}{4}}$

68. ax + by + c = 0 does not represent equation of line if

(1) $a = c = 0, b \neq 0$

(2) $b = c = 0, a \neq 0$

(3) $a = b = 0$

(4) $c = 0, a \neq 0, b \neq 0$

69. In the following fig., if O is the centre of the circle and radius OA = 14 cm, then the area of the shaded portion is :
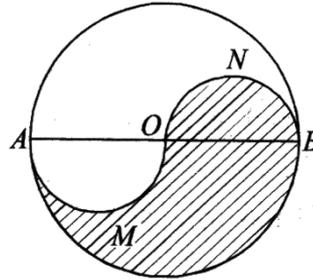
(1) $98 \, \pi cm^2$

(2) $154 \, \pi cm^2$

(3) $56 \, \pi cm^2$

(4) None of these

70. In the adjoining figure, given a right Δ and a incircle to this Δ is drawn, P = 15 and B = 8. Find inradius of triangle, P means perpendicular & B means base of Δ.
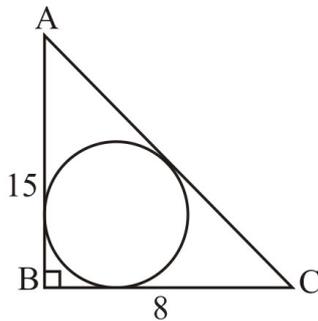
(1) 1 cm

(2) 2 cm

(3) 3 cm

(4) 4 cm

71. If the sum of n terms of two arithmetic progressions are in the ratio (3n + 8) : (7n + 15), then find the ratio of their 8th terms?

(1) $\dfrac{29}{71}$

(2) $\dfrac{53}{120}$

(3) $\dfrac{71}{29}$

(4) $\dfrac{43}{125}$

72. ABC is an equilateral triangle (see figure). D is any point on BC. If coordinates of D(1, 0), E(1, −3), F(6, 2√6). Find the length of altitude from A to BC (in units).
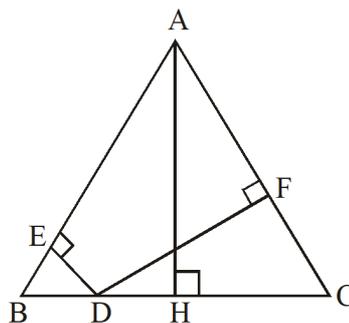
(1) 10 units

(2) 12 units

(3) 10.12 units

(4) 1 unit

73. In the following figure, if PQR is the tangent to a circle at Q whose centre is O, AB is a chord parallel to PR and ∠BQR = 70°, then ∠AQB is equal to

(1) 20°   (2) 40°   (3) 35°   (4) 45°

74. The angle of elevation of the top of a building 30m high from the foot of another building in the same plane is 60°, and also the angle of elevation of the top of the second tower from the foot of the first tower is 30°, then the distance between the two buildings is :

(1) $10\sqrt{3}$m   (2) $15\sqrt{3}$m   (3) $12\sqrt{3}$m   (4) 36m
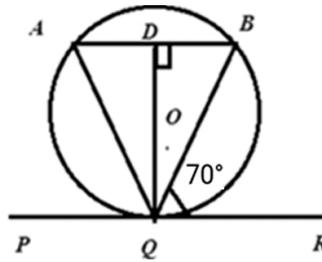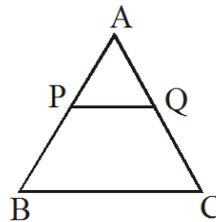
75. In below figure PQ ∥ BC & AP : PB = 1 : 2 then the ratio of Area of ΔAPQ and ΔABC will be

(1) 1 : 2   (2) 1 : 4   (3) 1 : 9   (4) 4 : 1

76. If a card is drawn from a pack of cards. The probability of getting black ace is

(1) $\dfrac{1}{52}$ (2) $\dfrac{1}{26}$ (3) $\dfrac{1}{13}$ (4) $\dfrac{1}{4}$

77. If α, β are roots of equation $x^2 - 2x - 5 = 0$ then equation whose roots are $\dfrac{\alpha}{\alpha - 1}, \dfrac{\beta}{\beta - 1}$ is :-

(1) $6x^2 - 12x + 5 = 0$ (2) $2x^2 + 8x - 5 = 0$ (3) $2x^2 - 8x + 5 = 0$ (4) $6x^2 + 12x - 5 = 0$

78. The median of the following data is given by

Class	5-10	10-15	15-20	20-25	25-30	30-35	35-40	40-45
Frequency	5	6	15	10	5	4	2	2

(1) 20.5   (2) 19.5   (3) 18   (4) 17.5

79. If $\sin(A - B) = \dfrac{1}{2}$ and $\cos(A + B) = \dfrac{1}{2}$, then the value of B is (where 0° ≤ A, B ≤ 90°) :

(1) 45°   (2) 60°   (3) 15°   (4) 0°

80. If $5 \tan \theta = 4$ then the values of $\dfrac{5 \sin \theta - 3 \cos \theta}{5 \sin \theta + 2 \cos \theta} =$

(1) $\dfrac{1}{3}$ (2) $\dfrac{1}{6}$ (3) $\dfrac{4}{5}$ (4) $\dfrac{2}{3}$

SECTION-D : BIOLOGY

This section contains **20 Multiple Choice Question.** Each question has four choices (1), (2), (3) and (4) out of which **ONLY ONE** is correct.

81. Lysosomes are the reservoirs (store houses) of

(1) hydrolytic enzymes
(2) Cell organelles
(3) secretory glycoproteins
(4) RNA and proteins

82. Colourless plastids are known as

(1) Leucoplasts
(2) Chromoplasts
(3) Chloroplasts
(4) None of these

83. Endoplasmic reticulum sometime contains –

(1) Ribosomes
(2) Lysosomes
(3) Golgi bodies
(4) None of these

84. Which of the following set of organelles contain DNA?

(1) Mitochondria, lysosome
(2) Plasma membrane, mitochondria
(3) Chloroplast, mitochondria
(4) Chloroplast, golgi body

85. An animal cell differs from a plant cell in respect of –

(1) ER
(2) Cell wall
(3) Ribosomes
(4) Cell membrane

86. Which type of meristematic tissue is found in the base of leaves and internodes?

(1) Lateral meristem
(2) Apical meristem
(3) Intercalary meristem
(4) None of these

87. Which of the following tissue has dead cells ?

(1) Parenchyma
(2) Collenchyma
(3) Sclerenchyma
(4) All of these

88. The given figure shows a specific muscle fibre. Identify it.
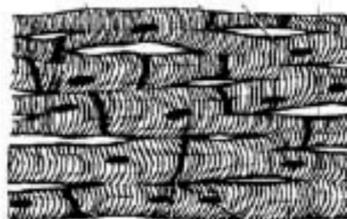
(1) Cardiac muscle fibre
(2) Striated muscle fibre
(3) Smooth muscle fibre
(4) Skeletal muscle fibre

89. The bile juice is produced in _____ and stored in _____ .

    (1) Liver, gall bladder

    (2) Pancreas, pancreatic duct

    (3) Liver, urinary bladder

    (4) Salivary glands, mouth

90. The energy change in photosynthesis is from :

    (1) Light energy to electrical energy

    (2) Light energy to molecular energy

    (3) Light energy to chemical energy

    (4) Light energy to activation energy

91. The inner lining of stomach is protected by one of the following from hydrochloric acid. Choose the correct one

    (1) Pepsin

    (2) Mucus

    (3) Salivary amylase

    (4) Bile

92. Major function of HCl of gastric juice is :–

    (1) Providing acidic medium for pepsin

    (2) Digestion of carbohydrates

    (3) Digest proteins

    (4) Facilitate absorption of food

93. Which of the following statements regarding the given figure of human brain are correct?
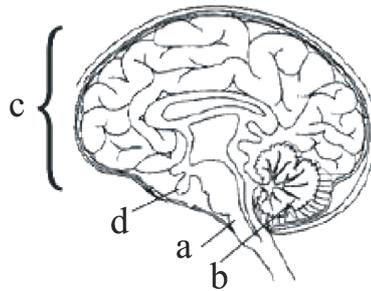
    (i) Labelled part 'a' is involved in control of blood pressure, salivation and vomiting.

    (ii) Labelled part 'b' is responsible for precision of voluntary actions and maintaining the posture and balance of the body.

    (iii) The part labelled 'c' is responsible for change in size of the pupil and involuntary activities.

    (iv) The secretions of part labelled 'd' are responsible for functioning of hypothalamus.

    (1) (i) and (ii)

    (2) (i), (ii) and (iii)

    (3) (i) and (iv)

    (4) (ii), (iii) and (iv)

94. Cerebellum is concerned with : –

    (1) Co-ordination of muscular movement

    (2) Memory

    (3) Vision

    (4) Reflex action

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95. Identify the labels (1, 2 and 3) in the given figure showing exchange of gases between alveoli and blood capillaries. Select the correct option.

(1) $1 - CO_2$, $2 - O_2$, $3 -$ RBCs

(2) $1 - O_2$, $2 - CO_2$, $3 -$ RBCs

(3) $1 -$ RBCs, $2 - O_2$, $3 - CO_2$

(4) $1 - CO_2$, $2 -$ RBCs, $3 - O_2$

96. Assertion (A): During vigorous exercise, anaerobic respiration can occur in muscle cells.

Reason (R): Anaerobic respiration produces more ATP per molecule of glucose compared to aerobic respiration.

(1) Both A and R are true, and R is the correct explanation of A

(2) Both A and R are true, but R is NOT the correct explanation of A

(3) A is true but R is false

(4) A is false but R is true

97. Mendel conducted his famous breeding experiments by working on-

(1) Drosophila

(2) Pisum sativum

(3) Escherichia coli

(4) All of these

98. Which of the following is the phenotypic monohybrid ratio in F_2 generation?

(1) 3 : 1

(2) 1 : 2 : 1

(3) 2 : 2

(4) 1 : 3

99. Which of the following are environment friendly practices ?

(1) Carrying cloth-bags to put purchases in while shopping

(2) Switching off unnecessary lights and fans

(3) Walking to school instead of getting your mother to drop you on her scooter

(4) All of the above.

100. Producers in any grazing food chain :-

(1) Feed the lion

(2) Feed the snake

(3) Harm the atmosphere

(4) Capture solar energy

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Time: 2Hrs.   **Maximum Marks: 320**

Please read the instructions carefully. You are allotted 5 minutes specifically for this purpose.

INSTRUCTIONS

1. This booklet is your Question Paper. **DO NOT** break seal of Booklet until the invigilator instructs to do so.

2. Fill your Form No. in the space provided on the top of this page.

3. The Answer Sheet is provided to you separately which is a machine readable Optical Response Sheet **(ORS)**. You have to mark your answers in the **ORS** by darkening bubble, as per your answer choice, by using **black & blue ball point pen.**

4. Total Questions to be Attempted **80. Part-I** : 20 Questions & **Part-II** : 60 Questions.

5. After breaking the Question Paper seal, check the following :

    a. There are **16 pages** in the booklet containing question no. 1 to 100 under 2 Parts i.e. Part-I & Part-II.

    b. Part-I contains total 20 questions of IQ (Mental Ability).

    c. Part-II contains total 80 questions under 4 sections which are-

      Section (A) : Physics, Section (B): Chemistry, Section (C): Mathematics* & Section (D): Biology*. ***Important : *For Engineering Stream attempt Only Section-A (Physics), Section-B (Chemistry) & Section-C (Mathematics).**

    *For Medical Stream attempt Only Section-A (Physics), Section-B (Chemistry) & Section-D (Biology).

6. **Marking Scheme :**

    a. If darkened bubble is RIGHT answer : **4 Marks**.

    b. If no bubble is darkened in any question: **No Mark**.

    c. **Only for part - II** : If darkened bubble is WRONG answer: **–1 Mark (Minus One Mark).**

7. Think wisely before darkening bubble as there is negative marking for wrong answer.