

Sample Paper: Admission Test

Select the correct alternative. Only one is correct.

There is **NEGATIVE** marking. For each wrong answer 0.5 mark will be deducted.

Time: 2 Hrs.

Marks: 90 x 2 = 180.

Q.1 A positive number whose reciprocal equals one less than the number, is

- (A) $\frac{(1+\sqrt{2})}{2}$ (B) $\frac{(\sqrt{2}-1)}{4}$
 (C) $\frac{(1+\sqrt{5})}{2}$ (D) $\frac{(\sqrt{2}+\sqrt{5})}{2}$

Q.2 A student took four exams, each time doubling the score of the previous exam. If the average of the four exams was x then the score of the first exam was kx where k equals

- (A) $\frac{1}{4}$ (B) $\frac{2}{9}$
 (C) $\frac{3}{16}$ (D) $\frac{4}{15}$

Q.3 Given a triangle with vertices A, B, C if $\tan A = \frac{2}{3}$, $\tan B = \frac{3}{4}$ and the length of the altitude from C to side AB is 6 then the area of the triangle is

- (A) 30 (B) 36
 (C) 42 (D) 51

Q.4 One side of a rectangle is 5 meters long. The area A of the rectangle as a function of its perimeter p, is

- (A) $A = 5p$ (B) $A = \frac{5p}{2} + 25$
 (C) $A = 5p - 25$ (D) $A = \frac{5p}{2} - 25$

Q.5 Let A, B, C be the vertices of an equilateral triangle and let D, E be points on the side AB such that segments AD, DE and EB each have length 1. Then $\tan \angle CDE$ equals

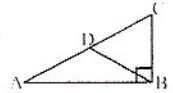
- (A) $3\sqrt{2}$ (B) $2\sqrt{3}$
 (C) $3\sqrt{3}$ (D) $\frac{3\sqrt{3}}{2}$

Q.6 The score of a certain multiple choice exam is computed as the number of right answers minus one fourth of the number of wrong answers. If the number of questions answered is N and the score is S then the number of right answers is

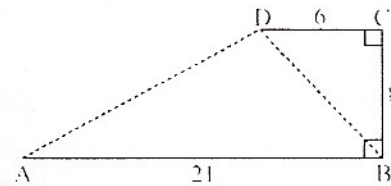
- (A) $\frac{5S-N}{4}$ (B) $\frac{4S+N}{5}$
 (C) $\frac{3S+N}{5}$ (D) $\frac{4S-N}{5}$

Q.7 In the figure shown, each edge of ABCD has length 1, D lies on AC, and $\angle ABC = 90^\circ$. The length AB, is

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



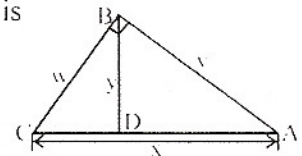
Q.8 The sum of the distances AD and BD in the figure shown, is



- (A) 27 (B) 28
 (C) 29 (D) 31

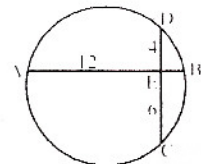
Q.9 In the figure shown, $\angle ABC$ and $\angle BDA$ are both right angles. If $v + w = 35$ and $x + y = 37$, then the value of y , is

- (A) 11
 (B) 12
 (C) 13
 (D) 14



Q.10 Suppose AB and CD are two perpendicular chords of the same circle that intersect at the point E, $AE = 12$, $DE = 4$ and $CE = 6$. The area of the circle, is

- (A) 50π
 (B) 45π
 (C) 40π
 (D) 35π



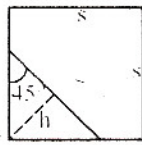
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- Q.11 An isosceles triangle has been cut from one corner of a square with side s . If the area of the triangle is one quarter of the area of the original square, then the height h of the triangle is

(A) $\frac{1}{\sqrt{2}}s$

(B) $\frac{\sqrt{2}}{2}s$



(C) $\frac{1}{4}s$

(D) $\frac{1}{2}s$

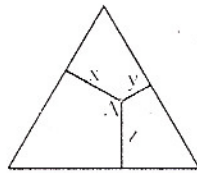
- Q.12 A certain point A inside an equilateral triangle with perimeter P is at distances x , y and z from the three sides, respectively. The sum $(x + y + z)$ is always

(A) P

(B) $\frac{P}{\sqrt{3}}$

(C) $\frac{2P}{\sqrt{3}}$

(D) $\frac{P}{2\sqrt{3}}$



- Q.13 Which one of the numbers listed below is not a divisor of the number $N = (2^{30} - 1)$, is equal to

(A) $2^5 - 1$

(B) $2^5 + 1$

(C) $2^6 - 1$

(D) $2^{10} + 1$

- Q.14 The two shortest sides of a right triangle have lengths $\sqrt{3}$ and 2. Let α be the smallest interior angle of this triangle, then the value of $\sin \alpha$, is

(A) $\sqrt{\frac{3}{7}}$

(B) $\sqrt{\frac{4}{7}}$

(C) $\sqrt{\frac{3}{5}}$

(D) $\sqrt{\frac{4}{5}}$

- Q.15 Let $x = \frac{4}{\left(\frac{1}{5^2} + 1\right) \cdot \left(\frac{1}{5^4} + 1\right) \cdot \left(\frac{1}{5^8} + 1\right) \cdot \left(\frac{1}{5^{16}} + 1\right)}$

then $(x + 1)^{48}$ is

(A) 25

(B) 125

(C) 625

(D) 5

- Q.16 If $\cos 5x = A \cos^5 x + B \cos^4 x + C \cos^3 x + D \cos^2 x + E \cos x + F$, for all value of x , then the sum of A, B, C, D, E and F equals

(A) 0

(B) 1

(C) 6

(D) none

- Q.17 If $\sin x + \cos x = 1$, then let the value of $(\sin^3 x + \cos^3 x)$ is α and if $\tan x + \cot x = 2$, then let the value of $(\tan^4 x + \cot^4 x)$ is β .

Let $x^2 + bx + c = 0$ is the quadratic equation whose roots are α and β . The value of $(b + c)$ equals

(A) 1

(B) -1

(C) 5

(D) 6

- Q.18 If A to F are the vertices of a regular hexagon listed in clockwise order, consider the triangle ACE . The ratio of the area of the triangle to the area of the hexagon, is

(A) 1 : 2

(B) 1 : 3

(C) 2 : 3

(D) 1 : $\sqrt{3}$

- Q.19 Difference of two different irrational numbers

(A) cannot be an integer.

(B) cannot be a rational number.

(C) can be a rational number.

(D) can not be a prime.

- Q.20 The remainder when $(x^{51} + 51)$ is divided by $(x + 1)$, is

(A) 0

(B) 1

(C) 51

(D) 50

- Q.21 Solve for n in $4^n + 4^n + 4^n + 4^n = 2^{2010}$.

(A) 1005

(B) 2010

(C) 1004

(D) 1003

- Q.22 If $\sin \alpha \cos \beta = 1$, then $\cos \alpha \sin \beta$ is equal to

(A) 1

(B) 0

(C) -1

(D) $\frac{1}{2}$

CODE : A

CODE : A

Q.23 The given square is a magic square. All rows, columns, and main diagonals add up to $3a$. The value of the centre square, is

- (A) $a - 2$
 (B) $a - 1$
 (C) a
 (D) $a + 1$

	$a + 5$	$a - 1$
		$a - 3$

Q.24 A bucket is currently full of water and has a mass of 29 kg. When it is half filled with water, it has a mass of 18.5 kg. The mass of the bucket when it is filled to one third of maximum capacity, is

- (A) 14 (B) 15
 (C) 16 (D) 17

Q.25 Let T be equilateral triangle of height h and S can be a square of side s . If T and S have the same area, then $\frac{h}{s}$ is

- (A) $3^{\frac{1}{4}}$ (B) $2\sqrt{3}$
 (C) $2\sqrt[3]{3}$ (D) 1

Q.26 If A_c the area of a square inscribed in a circle of radius r and A_s is the area of the square inscribed in a semicircle of the same circle, then

$\frac{A_c}{A_s}$ is equal to

- (A) $\frac{4}{3}$ (B) $\frac{5}{4}$
 (C) $\frac{5}{2}$ (D) 4

Q.27 The equation $x^2 - (2k + 1)x + k^2 - 1 = 0$ has two roots: $\sin \theta$ and $\cos \theta$, where k and θ are not real constants. Then k equals

- (A) -1 (B) 0
 (C) $\frac{1}{2}$ (D) 1

Q.28 A two digit number N contains the smaller of the two digits in the unit place. The product of the digits is 40 and the difference between the digits is 3. The sum of the digits in N is

- (A) 11 (B) 12
 (C) 13 (D) 14

CODE : A

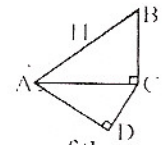
Q.29 If $a^x = c^y = b$ and $c^z = a^q = d$, then

- (A) $xy = qz$ (B) $\frac{x}{y} = \frac{q}{z}$
 (C) $x + y = q + z$ (D) $x - y = q - z$

Q.30 The smallest prime number that divides the sum $(7^{11} + 11^{13})$ is

- (A) 2 (B) 3
 (C) 5 (D) 7

Q.31 In quadrilateral $ABCD$, $AC \perp BC$ and $AD \perp CD$, as shown.

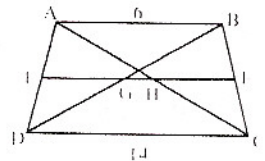


If $AB = 11$ units, then the sum of the squares of the sides of this quadrilateral, is

- (A) 122 (B) 132
 (C) 242 (D) 121

Q.32 $ABCD$ is a trapezium and EF is its median. The length of the segment GH , is

- (A) 3
 (B) 2
 (C) 4
 (D) 5



Q.33 The sum of all distinct solutions for

$$x : (x^2 - 7x + 11)^{(x^2 - 11x + 30)} = 1, \text{ is}$$

- (A) 11 (B) 13
 (C) 18 (D) 25

Q.34 Which one of the following is NOT a Pythagorean triplet?

- (A) 13, 84, 85 (B) 24, 45, 63
 (C) 48, 55, 73 (D) 65, 72, 97

Q.35 The expression $E = \frac{\tan x + \sec x - \cos x}{\sec x + \tan x}$

wherever defined, simplifies to

- (A) $\operatorname{cosec} x$ (B) $\sin x$
 (C) $\tan x$ (D) $\cot x$

Q.36 Two circles touch each other externally. If the sum of their area is 28π and the distance between their centres is 6 then the length of their external common tangent is

- (A) 4 (B) 8
 (C) $2\sqrt{10}$ (D) $8\sqrt{2}$

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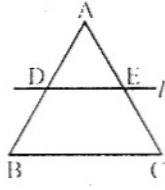
- Q.37 Equilateral triangle ABC is cut by line l such that l parallel BC. If $AC = 1$ and the area ΔDAE is equal to the area of trapezoid BDEC, the height of ΔDAE , is

(A) $\frac{\sqrt{3}}{8}$

(B) $\frac{\sqrt{2}}{2}$

(C) $\frac{\sqrt{6}}{4}$

(D) $\frac{\sqrt{3}}{2}$



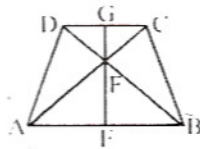
- Q.38 An isosceles trapezoid ABCD (shown) has base $AB = 10$, $CD = 6$. If the diagonals AC and BD intersect in point F and the altitude GE, of length 8, passes through F, then the length of EF, is

(A) $5\sqrt{2}$

(B) 5

(C) 3

(D) 4



- Q.39 The sum of the values of m for which the quadratic polynomial $f(x) = x^2 + (m + 5)x + (5m + 1)$ is a perfect square, is

(A) 3

(B) 7

(C) 8

(D) 10

- Q.40 The value of $\sum_{x=0}^{90} \sin^2 x^\circ$

(A) 2

(B) $\frac{89}{2}$

(C) 45

(D) $\frac{91}{2}$

- Q.41 The value of the sum $\sum_{n=1}^{2001} \frac{2}{\sqrt{2n+1} + \sqrt{2n-1}}$, is

equal to

(A) $\sqrt{2002} - 1$

(B) $\sqrt{4003} - 1$

(C) $\sqrt{2002} + 1$

(D) $\sqrt{4003} + 1$

- Q.42 If r_1 and r_2 are the roots of the equation $323x^2 - 1721x + 2001 = 0$, then the value of

$\frac{r_1^2}{r_1^2 r_2 + r_1 r_2^2} + \frac{r_2^2}{r_1^2 r_2 + r_1 r_2^2} + \frac{2r_1 r_2}{r_1^2 r_2 + r_1 r_2^2}$, is

(A) $\frac{-1721}{2001}$

(B) $\frac{1721}{2001}$

(C) $\frac{2001}{1721}$

(D) $\frac{-2001}{1721}$

- Q.43 The number $N = \sqrt[3]{2 + \sqrt{5}} + \sqrt[3]{2 - \sqrt{5}}$ equals

(A) 1

(B) $\sqrt{5} - 1$

(C) $\sqrt[3]{2}$

(D) $\sqrt{5} - \sqrt[3]{2}$

- Q.44 If the quadratic equation $x^2 - px - q = 0$ has two distinct real roots, then

(A) $p^2 - 4q \geq 0$

(B) $p^2 + 4q \geq 0$

(C) $p^2 > 4q$

(D) $p^2 > -4q$

- Q.45 Given that $7^y = 49^{x-6}$ and $32^x = 16^{y-9}$, then $|x - y|$ is

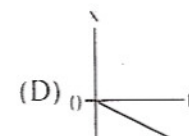
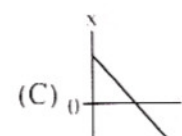
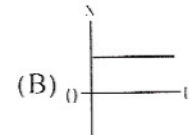
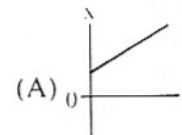
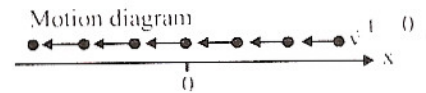
(A) 9

(B) 8

(C) 12

(D) 16

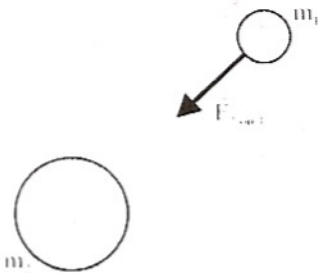
- Q.46 Which position-versus-time graph represents the motion shown in the motion diagram.



CODE : A

CODE : A

- Q.47 The figure shows a binary star system. The mass of star-2 is twice the mass of star-1. Compared to $\vec{F}_{1 \text{ on } 2}$, the magnitude of the force $\vec{F}_{2 \text{ on } 1}$ is



- (A) Four times as big (B) Twice as big
(C) The same size (D) Half as big

- Q.48 Bats can detect small objects such as insects that are of a size on the order of a wavelength. If bats emit a chirp at a frequency of 60 kHz and the speed of sound waves in air is 330 m/s, what is the smallest size insect they can detect?

- (A) 1.5 mm (B) 3.5 mm
(C) 5.5 mm (D) 7.5 mm

- Q.49 When a child throws a body upwards :

- (1) During throw biochemical energy of child is transformed into the kinetic energy of the body.
(2) After throw, the kinetic energy of child start converting into the potential energy of body.

- (A) both 1 and 2 are correct
(B) both are wrong
(C) only 1 is correct
(D) only 2 is correct

- Q.50 In order for two objects to have the same temperature, they must

- (A) be in thermal equilibrium
(B) be in thermal contact with each other.
(C) have the same feeling of "hotness" or "coldness" when touched
(D) have all of the properties listed above.

- Q.51 A 5kg piece of lead (specific heat $0.03 \text{ cal/g}^\circ\text{C}$) having temperature of 80°C is added to 500 g of water specific heat $1 \text{ cal/g}^\circ\text{C}$ having a temperature of 20°C . What is the final equilibrium temperature (in $^\circ\text{C}$) of the system?

- (A) 79 (B) 34
(C) 54 (D) 26

- Q.52 Two cannonballs are dropped from a second floor physics lab at height h above the ground. Ball B has four times the mass of ball A. When the balls pass the bottom of a first floor window at height $\frac{h}{4}$ above the ground, the relation between their kinetic energies, K_A and K_B is

- (A) $K_A = 4K_B$ (B) $K_A = 2K_B$
(C) $K_A = K_B$ (D) $K_B = 4K_A$

- Q.53 Tanu says that if you release the string when swinging a ball in a horizontal circle, the ball flies out in the radial direction defined by the string at the instant you release the ball. Manu says that it flies out along a tangent line perpendicular to the string. Which one, if either, is correct?

- (A) Tanu & Manu both are wrong
(B) Tanu is correct & Manu is wrong
(C) Tanu is wrong & Manu is correct
(D) Either may be correct depending on the initial speed.

- Q.54 You throw a ball up in the air and hold your hand under it to catch it when it comes down. The reason why the ball stops is because.

- (A) your hand exerts a force on the ball in the direction opposite to its velocity.
(B) your hand exerts a force on the ball perpendicular to its velocity.
(C) your hand exerts a force on the ball in the direction of its velocity.
(D) Your hand and the ball exert forces in the same direction on each other.

- Q.55 A particle confined to motion along the x-axis moves with constant acceleration from $x = 2.0 \text{ m}$ to $x = 8.0 \text{ m}$ during a 2.5 s time interval. The velocity of the particle at $x = 8 \text{ m}$ is 2.8 m/s. What is the acceleration during this time interval

- (A) 0.48 m/s^2 (B) 0.32 m/s^2
(C) 0.65 m/s^2 (D) 0.80 m/s^2

CODE : A

CODE : A

Q.56 Unit of the quantity, η coefficient of viscosity is,

$$\text{given } \eta = \frac{F(x_2 - x_1)}{\Lambda(v_2 - v_1)}$$

$F \rightarrow$ force, $\Lambda \rightarrow$ area, $(v_2 - v_1) \rightarrow$ change in velocity, $(x_2 - x_1) \rightarrow$ difference of positions.

- (A) $\text{N} \cdot \text{m} / \text{s}^2$ (B) $\text{N} \cdot \text{s} / \text{m}^2$
 (C) $\text{N} / \text{m}^2 \cdot \text{s}$ (D) $\text{N} / \text{s} \cdot \text{m}^2$

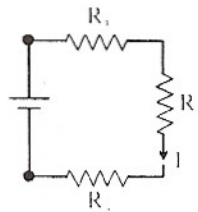
Q.57 1 gm of coal on complete combustion liberates 350 kJ of energy. Then the power of a hearth, in kilowatts, in which 36 kg of coal is burnt per hour will be:

- (A) 350 kW (B) 1260 kW
 (C) 1,26,000 kW (D) 3500 kW

Q.58 Three pith balls supported by insulating threads hang from a support. We know that ball X is positively charged. When ball X is brought near balls Y and Z without touching them, it attracts Y and repels Z. We can say that

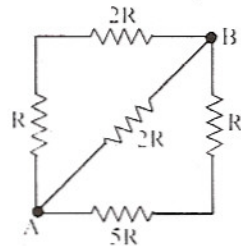
- (A) Y has negative charge and Z has positive charge
 (B) Y has positive charge and Z has -ve charge
 (C) Y as well as Z have positive charges.
 (D) Y as well as Z have negative charge.

Q.59 If $R_1 = 10\Omega$, $R_2 = 15\Omega$, $R_3 = 20\Omega$, and $I = 0.50 \text{ A}$, at what rate is heat being generated in these resistors?



- (A) 11 W (B) 16 W
 (C) 22 W (D) 1.1 W

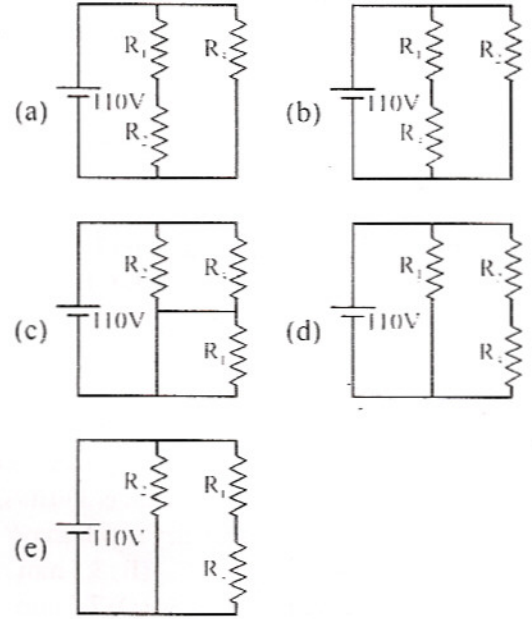
Q.60 What is the equivalent resistance between points A and B in the figure when $R = 10\Omega$?



- (A) 20 Ω (B) 10 Ω
 (C) 25 Ω (D) 15 Ω

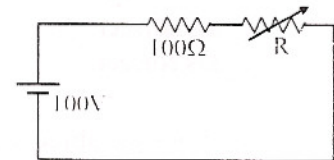
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Q.61 Which two circuits are exactly equivalent ?



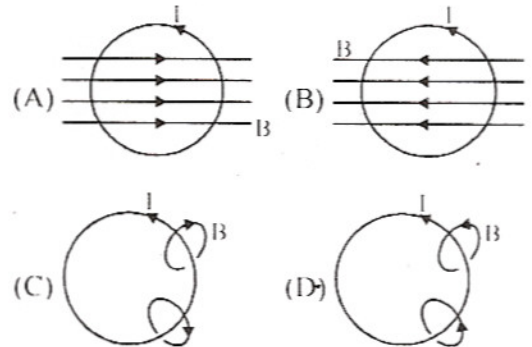
- (A) (a) and (b) (B) (b) and (c)
 (C) (c) and (d) (D) (b) and (e)

Q.62 A series circuit consists of a 100 V DC power source, a 100 Ω resistor, and a variable resistor of resistance R, which varies from 0 to 100 Ω . The current in the circuit is



- (A) directly proportional to R
 (B) inversely proportional to R
 (C) directly proportional to $(100\Omega + R)$
 (D) inversely proportional to $(100\Omega + R)$

Q.63 Which diagram correctly shows the magnetic field lines created by a circular current loop in which current flows in the direction shown ?



CODE : A

- Q.64 The reason the north pole of a bar magnet free to rotate points north is because
 (A) the south geographic pole of the earth is the earth's magnetic north pole.
 (B) the south geographic pole of the earth is the earth's magnetic south pole.
 (C) there is a net accumulation of negative magnetic charge at the earth's south geographic pole.
 (D) there is a net accumulation of positive magnetic charge at the earth's north geographic pole.

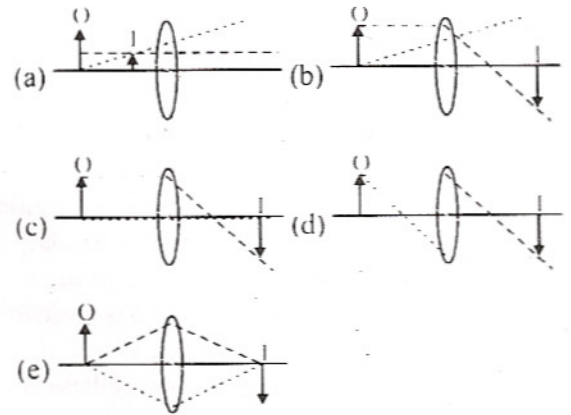
- Q.65 The difference between a DC and an AC generator is that
 (A) the DC generator has one slip ring split in two halves.
 (B) the DC generator has one unbroken slip ring.
 (C) the AC generator has one unbroken slip ring.
 (D) the AC generator has one slip ring split in two halves.

- Q.66 The speed of light changes when it goes from ethyl alcohol ($n = 1.361$) to carbon tetrachloride ($n = 1.461$). The ratio of the speed in carbon tetrachloride to the speed in ethyl alcohol, v_2/v_1 , is
 (A) 1.99 (B) 0.93
 (C) 1.07 (D) 0.51

- Q.67 A telescope is constructed with two lenses separated by a distance of 25 cm. The focal length of the objective is 20 cm. The focal length of the eyepiece is 5 cm. Calculate the angular magnification of the telescope.
 (A) 6 (B) 4
 (C) 8 (D) 10

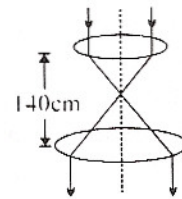
- Q.68 If you stand closer to a concave mirror than a distance of one focal length, the image you see is
 (A) real and inverted
 (B) virtual and upright
 (C) real and upright
 (D) none of the above because you do not get an image.

- Q.69 Which ray diagrams are correct? The three rays in each diagram are distinguished by different types of lines.



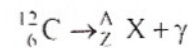
- (A) (b) and (c) (B) (c) and (d)
 (C) (d) and (e) (D) (c), (d) and (e)

- Q.70 Consider an arrangement which consists of two converging lenses of focal lengths 40 cm and 100 cm having a common optical axis. A light beam of diameter 4 mm is incident on the 40 cm focal length lens as shown in figure. The diameter of the final beam will be



- (A) 2.5 cm (B) 0.8 cm
 (C) 1 cm (D) 2 cm

- Q.71 What value of Z (atomic number) and A (mass number) result in the following gamma decay?



- (A) Z = 5; A = 12 (B) Z = 4; A = 8
 (C) Z = 7; A = 12 (D) Z = 6; A = 12

- Q.72 How much work is done in stopping a body of mass 5kg moving at a speed 5m/s on a smooth frictionless plane:
 (A) 31.25 Joule (B) 125 Joule
 (C) 60 Joule (D) 62.5 Joule

CODE : A

CODE : A

- Q.73 Select the correct matching sequence.
- (1) Stoney (a) A stream of positively charged particles
 (2) Milliken (b) Electron
 (3) Wein (c) neutron
 (4) Chadwick (d) charge on an electron
 (A) 1-d; 2-b; 3-c; 4-a
 (B) 1-b; 2-d; 3-a; 4-c
 (C) 1-c; 2-b; 3-a; 4-d
 (D) none of these is correct.

- Q.74 Select the correct sequence of True (T) and false (F) statement :
- (I) Ethanoic acid is used as a coagulating agent for preparation of casein from milk.
 (II) Acetic acid dissolves sulphur.
 (III) Esterification reaction is reversible.
 (A) T, T, F (B) T, F, F
 (C) F, F, T (D) none of these is correct.

- Q.75 Correct IUPAC matching option out of these is



- (A) (P)-(J); (Q)-(L); (R)-(K); (S)-(M)
 (B) (P)-(L); (Q)-(J); (R)-(M); (S)-(K)
 (C) (P)-(M); (Q)-(L); (R)-(K); (S)-(J)
 (D) None of these is correct

- Q.76 Select correct sequence of True (T), False (F) statement-
- I. Calcium hydroxide is a weak base
 II. Boric acid is tribasic acid
 III. 80% (w/w) solution of ethanoic acid is stronger than a 20% (w/w) solution of sulphuric acid
 IV. A insoluble base is formed when sodium hydroxide reacts with iron (III) chloride
 (A) F F F T (B) T F F T
 (C) T F F F (D) T T T F

CODE : A

- Q.77 You are given four reactions-
- I. $\text{Fe}_2\text{O}_3 + 3\text{CO} \rightarrow 2\text{Fe} + 3\text{CO}_2$
 II. $\text{H}_2\text{S} + \text{Br}_2 \rightarrow 2\text{HBr} + \text{S}$
 III. $3\text{MnO}_2 + 4\text{Al} \rightarrow 2\text{Al}_2\text{O}_3 + 3\text{Mn}$
 IV. $\text{ZnO} + \text{C} \rightarrow \text{Zn} + \text{CO}$
 Select incorrect statement about these
 (A) In I Fe_2O_3 is oxidising agent
 (B) In II H_2S is reducing agent
 (C) In III MnO_2 is reducing agent
 (D) In IV ZnO is oxidising agent

- Q.78 Which one of the following is correct option about showing the catenation property of element-
- (A) Benzene (B) S_8 molecule
 (C) $\text{H}-\text{S}-(\text{S})_n-\text{S}-\text{H}$ (D) All A, B, C

- Q.79 Consider the given part of P.T. and select incorrect statement

B	C	N	O	F
Al	Si	P	S	Cl
Ga	Ge	As	Se	Br
In	Sn	Sb	Te	I
Tl	Pb	Bi	Po	At

- (A) In, Tl, Bi, Po are four elements showing ductility
 (B) B, C, Si all three can form giant molecules with other atoms on combination
 (C) N, O, P, I all four form small molecules
 (D) None of these
- Q.80 Given that the vapour pressure of liquid mercury [density = 13.6 g/ml] is 0.0000041 atmp at 27°C. What weight of mercury would it take to pollute a room that is $4 \times 3 \times 2 \text{ m}^3$ [Assume mercury vapour to be an ideal gas $R = .082 \text{ L atm K}^{-1} \text{ mol}^{-1}$] [Hg = 200]
 (A) 800 gm (B) 600 gm
 (C) 180 gm (D) None of these

CODE : A

- Q.81 Two elements Q and R form a compound with formula Q_2R_5 . 100 gm of sample of this compound contains 50 g of Q. Then the ratio of atomic mass of Q to at. mass of R will be-
- (A) $\frac{5}{2}$ (B) $\frac{2}{5}$
 (C) $\frac{3}{5}$
 (D) Can not be predicted data insufficient
- Q.82 Select incorrect statement
 [C = 12, H = 1, Ge = 72.6]
 (A) The term would a chemist use to describe haematite is ore
 (B) The molar mass of tetraphenyl germane $[(C_6H_5)_4Ge]$ will be 380.6
 (C) A refrigerant should have high volatility and low reactivity
 (D) Fuels are materials with energy stored in the bonds of molecules
- Q.83 Select incorrect statement-
 (A) An addition compound obtained by a reaction involving no valency change is called an adduct
 (B) Formula of aluminium acetate is CH_3COOAl
 (C) Silicon carbide is used as an abrasive
 (D) One degree absolute is equal to one degree centigrade
- Q.84 Select false statement-
 (A) Life is built on the chemistry of carbon, whereas the solid earth that supports life is built on the chemistry of element below it in P.T.
 (B) There is a chemical difference between Iron, Pig iron, Cast iron and steel
 (C) The IV state of matter PLASMA can not conduct electricity
 (D) NaCl, HCl and Fe_2O_3 are all examples of binary compounds
- Q.85 How many gms of O_2 could you produce at the most from no more than 1 gm of OF_2 and 1 gm of H_2O on reaction? [O = 16, F = 19]
 (A) 0.592 gm (B) 2.48 gm
 (C) 1.235 gm (D) none of these
- Q.86 Methane gas, water vapour, nitrogen gas and dioxygen all four react to give only two gases one is acidic in nature, other is basic. Then stoichiometric coefficients of acidic and basic gases formed in the balanced chemical equation respectively are
 (A) 7, 16 (B) 9, 18
 (C) 7, 12 (D) 6, 14
- Q.87 Which of the following has maximum number of neutrons per proton?
 (A) $^{32}_{16}S$ (B) $^{107}_{47}Ag$
 (C) $^{197}_{79}Au$ (D) $^{56}_{26}Fe$
- Q.88 Select incorrect statement
 (A) O^{2-} , S^{2-} and Se^{2-} are chalcogenide dianions
 (B) He^- , Li^- , Be^- and B^{2-} will have same electronic configuration
 [At. No. He = 2, Li = 3, Be = 4, B = 5]
 (C) House-hold LYE should never be used in aluminium containers
 (D) $Fe(FeO_2)_2$ is not an oxide of iron.
- Q.89 Select incorrect statement
 (A) The molecules in chemistry are three dimensional assuming this to be true the forces between two HCl polar molecules are always attractive.
 (B) The inhibition or a complete suppression of a chemical process by the reaction products is called passivation.
 (C) Antimony (At. wt. 121.8) forms more than one oxide. When 20 gm of antimony reacts with 3.95 gm dioxygen the formula of the oxide formed will be Sb_2O_3
 (D) A hypothetical gaseous compound of C, H and S is burnt in air. It is found that 3 volume of the compound gives 3 volume CO_2 , 3 volume SO_2 and 6 volume water vapour. Then the formula of the compound can be CH_4S .
- Q.90 Which gas will form bubbles on being slowly passed through water?
 (A) Ammonia
 (B) Phosphine
 (C) Hydrogen chloride gas
 (D) None of these

CODE : A

CODE : A