Q.1 Which of the following are used for running magnetically levitated superfast trains?

(a)Diamagnets (b) Paramagnets

(c)Ferromagnets (d) Superconducting magnets

Q.2 If a is the length of the side of a cube, the distance between the body center atom and one corner atom in the cube will be

(a) $\frac{2}{\sqrt{3}}$a (b) $\frac{4}{\sqrt{3}}$a

(c) $\frac{\sqrt{3}}{4}$a (d) $\frac{\sqrt{3}}{2}$a

Q.3 6.02×10^{20} molecules of urea are present in 100mL of its solution. The concentration of solution is

(a)0.02M (b)0.01 M

(c)0.001 M (d) 0.1M

Q.4 Resistance of 0.2M Solution of an electrolyte is 50Ω. The Specific conductance of the solution is $1.3 Sm^{-1}$ If resistance of the 0.4M solution of the same electrolyte is 260 Ω, its molar Conductivity is

(a) 625 S m^2 mol^{-1}

(b) 6.25×10^{-4} S m^2 mol^{-1}

(c) 625×10^{-4} S m^2 mol^{-1}

(d) 62.5 S m^2 mol^{-1}

Q.5 For the elementary reaction M→N, the rate or disappearance of M increases by a factor of 8 upon doubling the concentration of M. The oder of the reaction with respect to M is

(a)4 (b)3

(c) 2 (d) 1

Q.6 Which property of colloidal solutions is independent of charge on the colloidal particles?

(a) Coagulation (b) Electrophoresis

(c) Electroosmosis (d) Tyndall effect

Q.7 In the extraction of copper from its sulphide ore, the metal finally obtained by the reduction of cuprous oxide with

(a) Copper (I) sulphide(Cu_2S) (b) Sulphur dioxide(SO_2)

(c) iron sulphide(FeS) (d)carbon Monoxide(CO)

Q.8 The Correct order of the basic strength of amines in aqueous medium is

(a) $C_2H_5NH_2 > (C_2H_5)_2NH > (C_2H_5)_3N$

(b) $C_2H_5NH_2 > (C_2H_5)_3N > (C_2H_5)_2NH$

(c)$(C_2H_5)_2NH>(C_2H_5)_3N>C_2H_5NH_2$

(d) $(C_2H_5)_2NH>C_2H_5NH_2>(C_2H_5)_3N$

Q.9 Potentiometer measures the potential difference more accurately than a voltmeter because

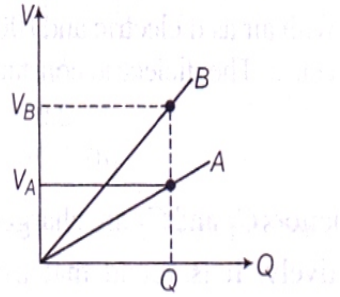
(a) It has a wire of high resistance

(b) It has a wire of low resistance

(c) It does not draw current from external circuit

(d) It draws a heavy current from external circuit

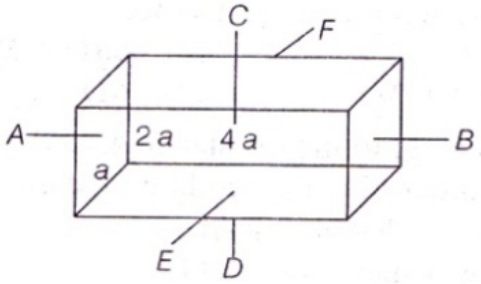
Q.10 The graph show the variation of voltage V across the plates of tow capacitors A and B versus increase of charge Q stored in them. Which of the capacitors has higher capacitance?



(a) Capacitor A (b) Capacitor B

(c) Both (a) and (b) (d) None of these

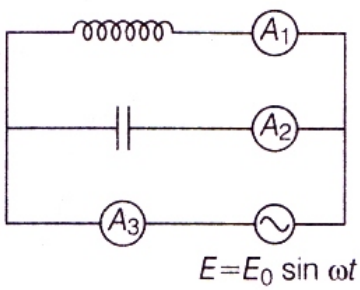
Q.11 A conductor with rectangular cross-section has dimensions (a$\times 2a \times 4a$) as shown in figure. Resistance across AB is R_1, Across CD is R_2 and across EF is R_3.Then,



(a) $R_1=R_2=R_3$ (b) $R_1>R_3>R_2$

(c) $R_2>R_3>R_1$ (d) None of these

Q.12 A inductor L and a capacitor C are connected in the circuit as shown in the figure. The frequency of the power supply is equal to the resonant frequency of the circuit. Which ammeter will read zero ampere?



(a) A_1 (b) A_2

(c) A_3 (d) None of these

Q.13 If the potential energy of the electron in the hydrogen atom is $\frac{-Ke^2}{r}$, its kinetic energy is

(a) $\frac{-Ke^2}{2r}$ (b) $\frac{-Ke^2}{r}$

(c) $\frac{Ke^2}{2r}$ (d) $\frac{Ke^2}{r}$

Q.14 A Square of side L meters lies in the x-y plane in a region, Where the magnetic field is given by $B=B_0(2\hat{\imath}+3\hat{\jmath}+4\hat{k})$ T, where B_0 is Constant, The magnitude of flux Passing through the square is

(a) $2B_0 L^2$ Wb (b) $3B_0 L^2$ Wb

(c) $4B_0 L^2$ Wb (d)$\sqrt{29}\, B_0 L^2$ Wb

Q.15 Two Conducting wires X and Y of diameter ratio 2:1 but different materials are joined in series across a battery. If number density of electrons in X is twice that in Y,find the ratio of electrons in the two wires.

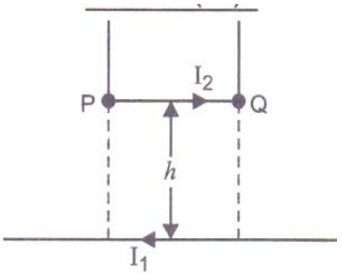
(a) $\frac{1}{8}$ (b) $\frac{1}{5}$

(c) $\frac{5}{8}$ (d) $\frac{3}{2}$

Q.16 A long straight wire carrying current o 25 A rests on a table os shown in fig. Another wire PQ of Length 1 m ,mass 2.5g carrries the same current but in the opposite direction. The wire PQ is free to slide up and down.To what height will PQ rise?

(a) 0.51cm (b) 1.23cm

(c) 3.20cm (d) 0.55cm



Q.17 If we try to fertilised Lion egg with man sperm, then is it possible, if no, give reason.

(a) Fertilizin chemical of ovum can attracts antifertilizin chemical of sperm of same species only.

(b) Antifertilizin chemical of ovum can attracts antifertilizin chemical of sperm of same species only.

(c) Antigens chemical of ovum can attracts, antibody chemical of sperm of same species only.

(d) Antibody chemical of ovum can attracts antigens chemical of sperm of same species only.

Q.18 In a population of 1000 individual 360 belong to genotype AA, 480 to Aa and the remaining 160 to a, based on this data.The frequency of allele 'A' in population is.....

(a) 0.4 (b) 0.5

(c) 0.6 (d) 0.7

Q.19 The correct order of stages in the life cycle of plasmodium is.....

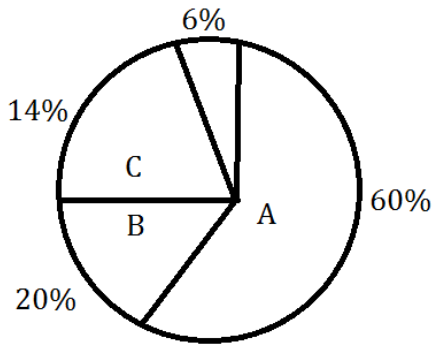
(a) Sporzoite (Human Blood) →Liver→ Gametocytes (RBC) →Ookinate (In Mosquito Stomach) → Sporzoite (Salivary Gland)

(b) Liver→ Gametocytes (RBC)→ Sporzoite (Salivary Gland) →Ookinate (In Mosquito Stomach) → Sporzoite (Human Blood)

(c) Sporzoite (Human Blood) → Liver→Ookinate (In Mosquito Stomach) → Gametocytes (RBC) → Sporzoite (Salivary Gland)

(d) Sporzoite (Salivary Gland) → Gametocytes (RBC)→ Liver→Ookinate (In Mosquito Stomach) → Sporzoite (Human Blood)

Q.20 Given PIE diagram represent the relative contribution of various GHGS to total global warming. Select the correct statement regarding A, B, C.



(a) A is the gas which is produced during the combustion of fossils fuel

(b) B are the chemical, which are used as coolant in refrigerator

(c) C is the gas which is major constituent of biogas

(d) All of these

Q.21 In a large, randomly mating population. Only one person in 1000 is an albino. What will be the frequency of a carrier person of albinism.

(a) 1 in 50 (b) 99 in 10000

(c) 2 in 10000 (d) 1 in 1000

Q.22 The gymnosperm differs from an angiospermic endosperm because in gymnosperm, it is.....

(a) haploid and development from female gametophyte

(b) Diploid and development from female gametophyte

(c) Triploid and development after fertilisation

(d) Triploid and development before fertilisation

Q.23 A 340 Å long segment of DNA molecule has 20 thymine N_2 base, what will be number of guanine N_2 base in the same segment

(a) 10 (b) 40

(c) 80 (d) 160

Q.24 Which of the following sequence is recognised by Hind III?

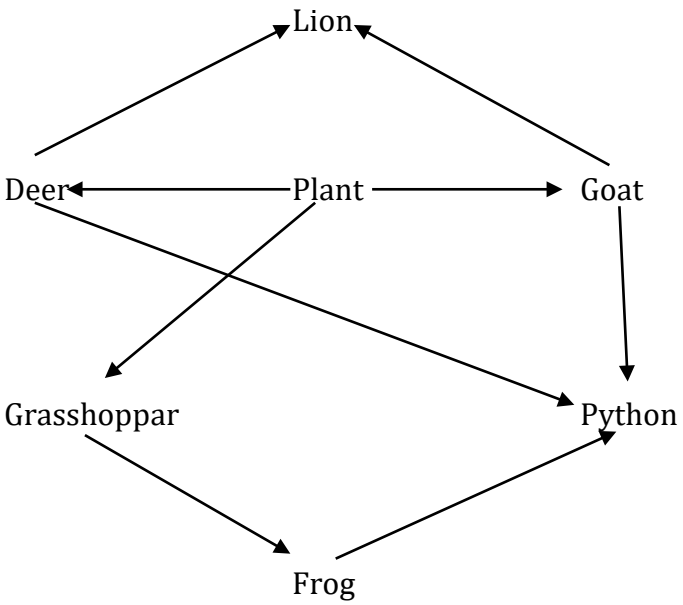
(a) $5' - A - G - C - T - 3'$
$3' - T - C - G - A \quad 5'$

(b) $5' - A - A - G - C - T - T - 3'$
$3' - T - T - C \quad G - A - A - 5'$

(c) $5' - C - C - T - G - G - 3'$
$3' \quad G \quad G \quad A \quad C \quad C - 5'$

(d) None of these

Q.25 How many food chains are there in the food web shown below:-



(a) 2 (b) 3

(c) 5 (d) 7

ANSWER KEY

1.d	**2.c**	**3.b**	**4.a**	**5.b**
6.d	**7.a**	**8.c**	**9.c**	**10.b**
11.b	**12.c**	**13.c**	**14.d**	**15.a**
16.a	**17.a**	**18.c**	**19.a**	**20.d**
21.a	**22.a**	**23.c**	**24.b**	**25.c**