

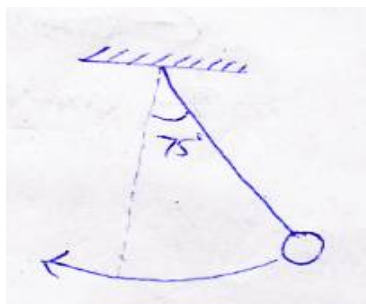
Time: 3 Hours

NEET -2

Max. Marks: 720 M

PHYSICS

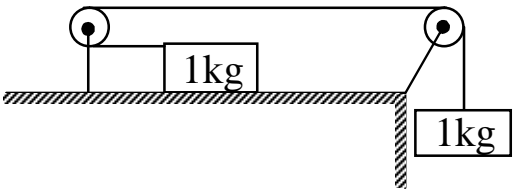
1. A physical quantity 'A' is related to four observations a, b, c and d as follows, $A = \frac{a^3 b^2}{\sqrt{cd^5}}$. The percentage errors of measurement in a, b, c and d are 1%, 3%, 2% and 2% respectively. What is the percentage error in the quantity A?
 1) 14 % 2) 20 % 3) 16 % 4) 18 %
2. The X and Y coordinates of a particle at any time t are given by $x = 10t + 6t^2$ and $y = 8t$, where x and y are in meter and t in seconds. The acceleration of particle at $t = 5s$ is
 1) $16ms$ 2) $10ms^{-2}$ 3) $12ms^{-2}$ 4) $16ms^{-2}$
3. A body is projected with velocity u such that its horizontal range and maximum vertical heights are same: The horizontal range is
 1) $\frac{8u^2}{17g}$ 2) $\frac{16u^2}{17g}$ 3) $\frac{4u^2}{17g}$ 4) $\frac{14u^2}{16g}$
4. A ball of mass 'm' moving with a speed u undergoes a head-on elastic collision with a ball of mass 'nm' initially at rest. The fraction of the initial kinetic energy transferred to the heavier ball is
 1) $\frac{4n}{(2+3n)^2}$ 2) $\frac{4n}{(1+n)^2}$ 3) $\frac{4n}{(3+n)^2}$ 4) $\frac{4n}{(5+n)^2}$
5. A body of mass 4 kg is rotating in a vertical circle of radius 1 m. What will be the difference in its kinetic energy at the top and bottom of the circle?
 ($g = 10ms^{-2}$)
 1) 20 J 2) 40 J 3) 60 J 4) 80 J
6. A pendulum of length $l = 1m$ is released from $\theta = 75^\circ$. The rate of change of speed of the bob at $\theta = 60^\circ$ is ($g = 10ms^{-2}$)



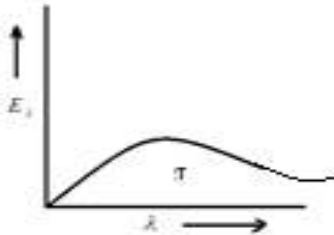
- 1) $5m/s^2$ 2) $2.5m/s^2$ 3) $5\sqrt{3}m/s^2$ 4) $2.5\sqrt{3}m/s^2$
7. Theorem of perpendicular axes is applicable for
 1) Planar bodies only 2) Regular shaped bodies only
 3) Three dimensional bodies only 4) Any body having mass
8. A rope is wound around a hollow cylinder of mass 6 kg and radius 50 cm. What is the angular acceleration of the cylinder if the rope is pulled with a force of 30 N ?
 1) $5rad/s^2$ 2) $10rad/s^2$ 3) $25rad/s^2$ 4) $5rad/s^2$
9. Let V_g and E_g denote gravitational potential and gravitational field respectively. Then the wrong statement is
 1) $V_g = 0, E_g = 0$ 2) $V_g \neq 0, E_g = 0$ 3) $V_g \neq 0, E_g \neq 0$ 4) $V_g = 0, E_g \neq 0$

10. A body of mass 'm' is taken from the earth's surface to the height equal to thrice the radius of the earth (R). The change in potential energy of body will be
- 1) $\frac{3}{4}MgR$ 2) $\frac{5}{4}mgR$ 3) $\frac{5}{4}MgR$ 4) $\frac{3}{4}mgR$
11. A particle executes linear SHM with an amplitude of 5 cm . When the particle is at 3 cm from the mean position, the magnitude of the velocity is equal to that of its acceleration . Then its time period in seconds is
- 1) $\frac{3\pi}{5}$ 2) $\frac{5\pi}{3}$ 3) $\frac{2\pi}{3}$ 4) $\frac{3\pi}{2}$
12. On increasing temperature and mixing impurities, the elasticity of a material
- 1) Increases, Increases 2) Decreases, Decreases
3) Increases, Decreases 4) Decreases, Increases
13. Water is moving with a speed of $3.5ms^{-1}$ through a pipe with a cross – sectional area of $2.2cm^2$. The water gradually descends 9.66 m as the pipe increase in area to $7.7 cm^2$. The speed of flow at lower level is
- 1) $4ms^{-1}$ 2) $3ms^{-1}$ 3) $2ms^{-1}$ 4) $1ms^{-1}$
14. The capacity of a vessel is 3 liters. It contains 16 gmoxygen, 14 gm nitrogen and 44 gm mixture (N_2O) at $27^{\circ}C$. If $R= 8.3 J/moleK$ Then pressure in the vessel will be
- 1) $8.3 \times 10^5 Pa$ 2) $16.6 \times 10^5 Pa$ 3) $24.9 \times 10^5 Pa$ 4) $33.2 \times 10^5 Pa$

15. A block of mass 1 kg is placed on a rough horizontal surface connected by a light string passing over two smooth pulleys as shown. Another block of 1 kg is connected to the other end of the string. The acceleration of the system is (coefficient of friction $\mu = 0.2$)



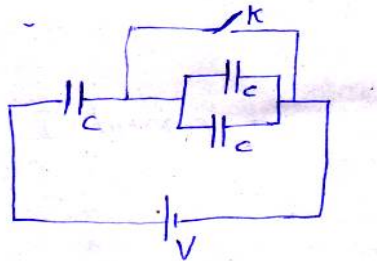
- 1) 0.8 g 2) 0.4 g 3) 0.5 g 4) zero
16. If the curve for a black body at temperature T is as shown in the figure , then the curve at temperature 2T will be



- 1) 2) 3) 4)

17. The coefficient of performance of a refrigerator is 6. If the temperature inside freezer is $-20^{\circ}C$, the temperature of the surroundings to which it rejects heat is (app)
- 1) $12^{\circ}C$ 2) $22^{\circ}C$ 3) $32^{\circ}C$ 4) $42^{\circ}C$

18. The internal energy in a system that has absorbed 2kal of heat and done 1400 J of work is
 1) 6000J 2) 7000J 3) 8000J 4) 9000J
19. A rocket is moving at a speed of 220ms^{-1} towards a stationary target, emits a sound of frequency 1000 Hz . Some of the sound reaching the target gets reflected back to the rocket asan echo. The frequency of the echo as detected by the rocket is (velocity of sound= 330ms^{-1})
 1) 3500 HZ 2) 4000 HZ 3) 4500 HZ 4) 5000 HZ
20. A string of length l is fixed at both ends and is vibratingin second harmonic. The tension in string is T and linear mass density of string is μ . The ratio of magnitude of maximum velocity of particle and the magnitude of maximum acceleration is
 1) $\frac{1}{2\pi} \sqrt{\frac{\mu l^2}{T}}$ 2) $2\pi \sqrt{\frac{\mu l^2}{T}}$ 3) $\frac{1}{2\pi} \sqrt{\frac{T}{\mu l^2}}$ 4) $2\pi \sqrt{\frac{T}{\mu l^2}}$
21. An α – particle of mass 6.4×10^{-27} kg is situated in a uniform electric field of $1.6 \times 10^5 \text{Vm}^{-1}$ The velocity of the particle at the end of 10^{-2}m path when it starts from rest is
 1) $2\sqrt{2} \times 10^5 \text{ms}^{-1}$ 2) $4\sqrt{2} \times 10^5 \text{m/s}$ 3) $2 \times 10^5 \text{ms}^{-1}$ 4) $4 \times 10^5 \text{ms}^{-1}$
22. The charge following through the cell on closing the key K is equal to

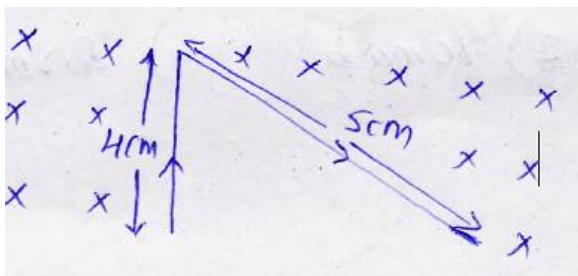


- 1) $\frac{CV}{4}$ 2) $\frac{CV}{3}$ 3) $\frac{CV}{2}$ 4) $\frac{2CV}{3}$
23. The electric potentials at a point (x, y, z) is given by $v = -x^3y - xz^3 + 4y + 10$. The electric field \vec{E} at that point is
 1) $(3x^2y + z^3)i + (x^3 + 4)j + (3xz^2)k$ 2) $(3x^2y - z^3)i + (x^3 + 4)j + (3xz^2)k$
 3) $(3x^2y + z^3)i + (x^3 - 4)j + (3xz^2)k$ 4) $(3x^2y - z^3)i + (x^3 - 4)j + (3xz^2)k$
24. A particle describes a horizontal circle on the smooth surface of an inverted cone. The plane of the circle is at a height of h m above the vertex, Then the speed of the particle is
 1) $\sqrt{\frac{h}{g}}$ 2) \sqrt{gh} 3) $\sqrt{\frac{gh^2}{R}}$ 4) $\sqrt{\frac{gR^2}{h}}$
25. The potential difference between A and B in the following figure is
-
- 1) 32 V 2) 48 V 3) 24 V 4) 14 V
26. A bulb rated 200 V- 100 W is in series with another bulb rated 200 V – 50 W. If the voltage across the combination is 240 V. Then power consumed by 100 W bulb is
 1) 8 W 2) 12W 3) 16 W 4) 20 W
27. A man runs towards a plane mirror at a rate of 6ms^{-1} . If the mirror is at rest, his image will have a velocity (with respect to man)
 1) $+12 \text{ms}^{-1}$ 2) -6ms^{-1} 3) 6ms^{-1} 4) -12ms^{-1}

28. The permeability of a substance is 3.14×10^{-4} wb/Am. Find its relative permeability and susceptibility
- 1) 500, 499 2) 300, 299 3) 200, 199 4) 250, 249
29. Unpolarised light falls on two polarizing sheets placed one on top of the other. What must be the angle between the characteristic directions of the sheets if the intensity of the final transmitted light is one-third the maximum intensity of the first transmitted beam?

1) $\cos^{-1}\left(\frac{1}{4}\right)$ 2) $\cos^{-1}\left(\frac{1}{\sqrt{3}}\right)$ 3) $\cos^{-1}\left(\frac{1}{\sqrt{2}}\right)$ 4) $\cos^{-1}\left(\frac{\sqrt{2}}{3}\right)$

30. A uniform conducting wire ABC has mass 10g. A current of 2 A flows through it. The wire is kept in a magnetic field of 4T. Neglecting gravity, acceleration of wire will be



- 1) Zero 2) 0.6 ms^{-2} along y-axis
 3) 1.2 ms^{-2} along y-axis 4) 24 ms^{-2} along y-axis
31. A galvanometer gives a full scale deflection when a current of 2 mA flows through it and the potential difference across its terminals is 4 mV. Which of the following resistors would be most suitable to convert it to give a full scale deflection for a current of 2 A ?
- 1) 0.002Ω in parallel 2) 0.002Ω in series 3) 0.004Ω in parallel 4) 0.004Ω in series
32. There are two coils A and B separated by some distance. If a current of 4 A flows through A, a magnetic flux of 10^{-2} Wb passes through B (no current through B). If no current passes through A and a current of 3A passes through B, what is the flux through A?
- 1) 5 m Wb 2) 7.5 m Wb 3) 10 m Wb 4) 2.5 m Wb
33. In a coil of area 20 cm^2 and 5 turns with a magnetic field directed perpendicular to the plane and is changing at the rate of 10^8 gauss/second. The resistance of the coil is 50Ω . The current in the coil will be
- 1) 1 A 2) 3 A 3) 2 A 4) 4 A
34. In a circuit the frequency is $f = \frac{25}{\pi} \text{ Hz}$ and the inductance is 2H, then the reactance and admittance will be
- 1) 1,1 2) 10, 0.1 3) 100, 0.01 4) 1000, 0.001
35. In a step-down transformer having primary to secondary turn ratio 10:1, the input voltage applied is 250V and output current is 10 A. Assuming 100% efficiency, calculate the voltage across secondary coil current in primary coil and power output.
- 1) $V_s = 2500 \text{ V}$ $I_p = 1 \text{ A}$ $P_0 = 250 \text{ W}$ 2) $V_s = 125 \text{ V}$ $I_p = 1 \text{ A}$ $P_0 = 25 \text{ W}$
 3) $V_s = 2500 \text{ V}$ $I_p = 1 \text{ A}$ $P_0 = 250 \text{ W}$ 4) $V_s = 25 \text{ V}$ $I_p = 1 \text{ A}$ $P_0 = 250 \text{ W}$
36. The electric field strength in an electromagnetic wave is 600 Vm^{-1} the magnitude of magnetic field strength will be
- 1) 200 T 2) 200 mT 3) $2 \mu\text{T}$ 4) 2 Mt

37. In a plane electromagnetic wave, the electric field oscillates sinusoidally at a frequency of $2 \times 10^{10} \text{ Hz}$ and amplitude 48 Vm^{-1} . The total energy density of the electromagnetic wave is
- 1) $7805 \times 10^{-8} \text{ J/m}^3$ 2) $1 \times 10^{-8} \text{ J/m}^3$ 3) $7805 \times 10^{-10} \text{ J/m}^3$ 4) $1 \times 10^{-12} \text{ J/m}^3$
38. The de- Broglie wavelength associated with an electron moving with a speed of $3.3 \times 10^6 \text{ ms}^{-1}$ ($h = 6.6 \times 10^{-34} \text{ Js}$)

- 1) 0.22 nm 2) $0.22 \mu\text{m}$ 3) 0.44 mm 4) 0.44 nm

39. A charged particle is moving in a uniform magnetic field in a circular path. The energy of the particle is tripled. If the initial radius of the circular path was R , the radius of the circular path after the energy is tripled will be

- 1) $3R$ 2) $9R$ 3) $27R$ 4) $\sqrt{3}R$

40. When ${}_{92}\text{U}^{238}$ transforms to ${}_{85}\text{U}^{210}$, then the numbers of the emitted α and β particles are respectively

- 1) $7\alpha, 8\beta$ 2) $8\alpha, 7\beta$ 3) $7\alpha, 7\beta$ 4) $8\alpha, 8\beta$

41. The output Y of the logic circuit shown in figure is



- 1) $\overline{A.B + C}$ 2) $\overline{A + \overline{B.C}}$ 3) $\overline{A.B.C}$ 4) $\overline{A + B.C}$

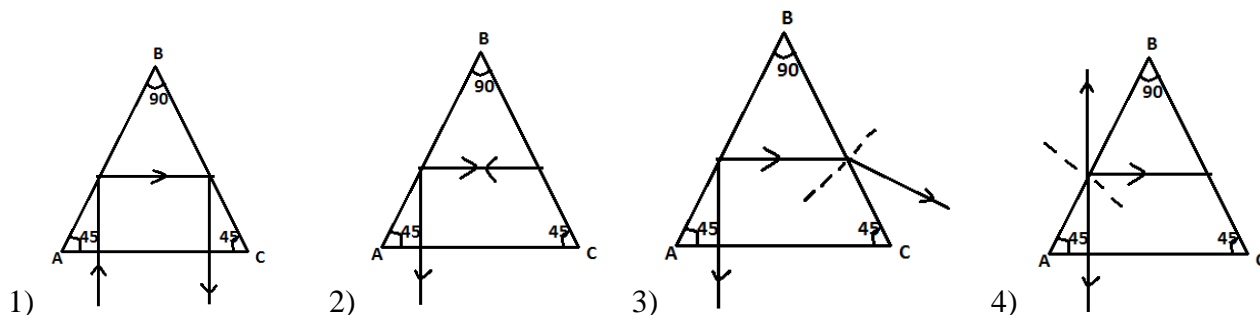
42. In a full wave rectifier, input as frequency ' ν '. The output frequency of current is

- 1) $\frac{\nu}{2}$ 2) ν 3) 2ν 4) 3ν

43. With a concave mirror, an object is placed at a distance y_1 from the principal focus, on the principal axis. The image is formed at a distance y_2 from the principal focus. The focal length of the mirror is

- 1) y_1, y_2 2) $\sqrt{y_1, y_2}$ 3) $\frac{y_1 + y_2}{2}$ 4) $\frac{y_1}{y_2}$

44. The refractive index of a material of a prism of angles $45^\circ - 45^\circ - 90^\circ$ is $\frac{3}{2}$. The path of the ray of light incident normally on the hypotenuse side is shown as



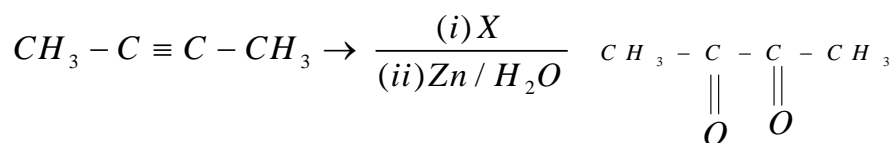
45. In YDSE, the two slits are separated by 0.1 mm and they are 0.5 m from the screen. The wavelength of light used is 5000 \AA . Find distance between 7th maxima and 11th minima on the screen

- 1) 8.75 m 2) 8.75 mm 3) $8.75 \mu\text{m}$ 4) 8.75 nm

CHEMISTRY

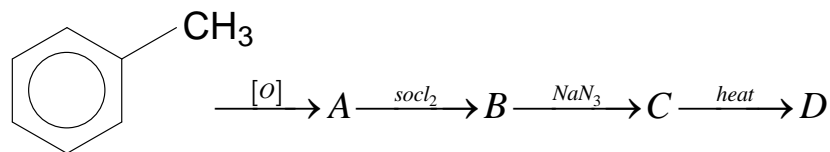
46. The solubility product of a salt having general formula MX_2 , in water is 4×10^{-12} . The Concentration of M^{2+} ions in the aqueous solution of the salt is
 1) $4 \times 10^{-1} M$ 2) $1.6 \times 10^{-4} M$ 3) $1 \times 10^{-4} M$ 4) $2 \times 10^{-6} M$
47. The Bond order in NO is 2.5. While that in NO^+ is 3. Which of the statements is true for these two species?
 1) Bond length in NO^+ is greater than in NO
 2) Bond length in NO is greater than in NO^+
 3) Bond length in NO^+ is equal to that in NO
 4) Bond length is unpredictable
48. Density of equilibrium mixture of N_2O_4 and NO_2 at 1 atm and 384 K is 1.84 gdm^{-3} . Calculate the equilibrium constant of the reaction $N_2O_4 \rightleftharpoons 2NO_2$
 1) 2.09 atm 2) 9.02 atm 3) 3.6 atm 4) 6.3 atm
49. ΔH and ΔS for the reaction $Br_2(l) + Cl_2(g) \rightarrow 2BrCl(g)$ are 29.37 KJ and 104 Jk^{-1} respectively. Above what temperature will this reaction become spontaneous?
 1) Above 150K 2) above 282.4K 3) above 153.5K 4) above 263.4K
50. The correct order of magnetic moments (spin only values in BM) among the following is
 1) $[MnCl_4]^{2-} > [CoCl_4]^{2-} > [Fe(CN)_6]^{4-}$ 2) $[MnCl_4]^{2-} > [Fe(CN)_6]^{4-} > [CoCl_4]^{2-}$
 3) $[Fe(CN)_6]^{4-} > [MnCl_4]^{2-} > [CoCl_4]^{2-}$ 4) $[Fe(CN)_6]^{4-} > [CoCl_4]^{2-} > [MnCl_4]^{2-}$

51.

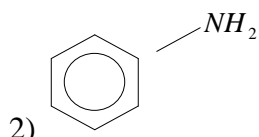


in the above reaction X is

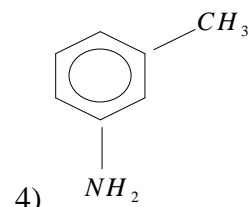
- 1) HNO_3 2) O_2 3) O_3 4) $KMnO_4$
52. What mass of $Mg(OH)_2$ is required to neutralize 125ml of 0.136 M HCl solution?
 1) 0.248 g 2) 0.992g 3) 1.98 g 4) 0.496g
53. In the following sequence of reactions, what is D



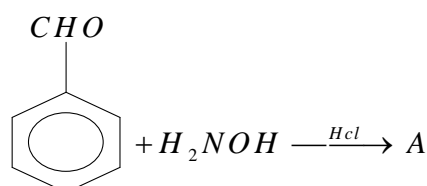
1) Primary Amine



3) Phenyl isocyanate



54.

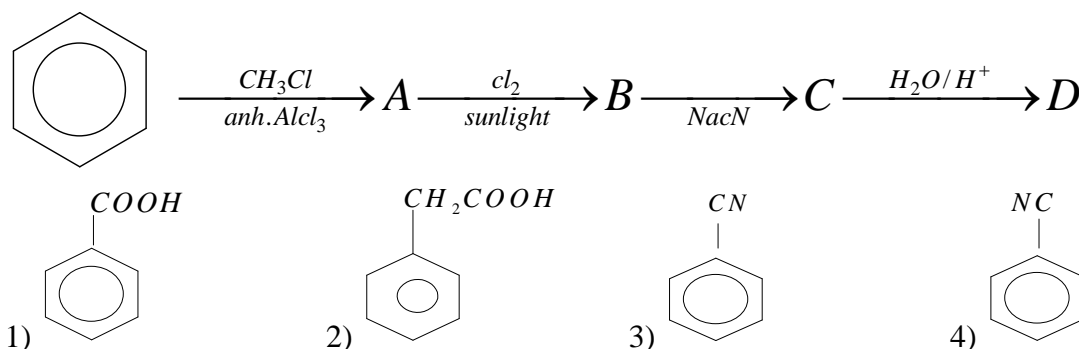


How many isomeric forms does the compound A exist?

- 1) 3 2) 4 3) 2 4) 1

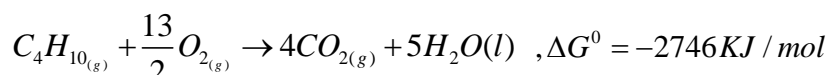
55. If uncertainly in the position of electron is 0.9 \AA^0 . The uncertainly in it's velocity is
 1) $5.8 \times 10^{10} \text{ cm/sec}$ 2) $5.8 \times 10^8 \text{ cm/sec}$ 3) $6.4 \times 10^7 \text{ cm/sec}$ 4) $0.64 \times 10^7 \text{ cm/sec}$
56. $(\text{CH}_3)_2\text{CO} \xrightarrow[\text{HCl}]{\text{NaCN}} \text{X} \xrightarrow[\Delta]{\text{H}_3\text{O}^+} \text{Y}$.
 In the above sequence of reactions X and Y are
 1) $(\text{CH}_3)_2\text{C}(\text{OH})\text{CN}$, $(\text{CH}_3)_2\text{C}(\text{OH})\text{COOH}$
 2) $(\text{CH}_3)_2\text{C}(\text{OH})\text{CN}$, $(\text{CH}_3)_2\text{C}(\text{OH})_2$
 3) $(\text{CH}_3)_2\text{C}(\text{OH})\text{CN}$, $(\text{CH}_3)_2\text{CHCOOH}$
 4) $(\text{CH}_3)_2\text{C}(\text{OH})\text{CN}$, $(\text{CH}_3)_2\text{C}=\text{O}$
57. The time requires to coat a metal surface of 80 cm^2 with $5 \times 10^{-3} \text{ cm}$ Thick layer of silver (density 1.05 g/cm^3) by passing a current of 3 amp through AgNO_3 solution is
 1) 115 sec 2) 125 sec 3) 135 sec 4) 145 sec
58. Biodegradable polymer which can be produced from glycine and aminocaproic acid is
 1) Buna -N 2) Nylon 6,6 3) nylon 2- nylon6 4) PHBV
59. Which of the following compounds is an anti fertility drug?
 1) Aspirin 2) Penicillin 3) Chloromycetin 4) norethindrone
60. $\text{X} \xleftarrow{\text{HI}} \text{Glu cose} \xrightarrow{\text{HNO}_3} \text{Y}$. what are X and Y?
 1) n- Hexane and gluconic acid 2) Gluconic acid and saccharic acid
 3) n- Hexanol and saccharic acid 4) n- hexane and saccharic acid
61. $\text{CH}_3 - \text{CH}_2 - \text{OH} \xrightarrow{\text{PCC}} \text{A} \xrightarrow{\text{NaOH}} \text{B}$. Then 'B' is
 1) $\text{CH}_2 = \text{CH}_2$ 2) CH_3CHO
 3) $\text{CH}_3 - \text{COOH}$ 4) $\text{CH}_3 - \underset{\text{OH}}{\text{CH}} - \text{CH}_2 - \text{CHO}$

62.



63. Which of the following order is true regarding the acidic nature of phenol?
 1) Phenol > O - cresol > O - Nitro phenol 2) Phenol > O - cresol < O - Nitro phenol
 3) Phenol < O - cresol < O - Nitro phenol 4) Phenol < O - cresol > O - Nitro phenol
64. In the following reaction. X and Y respectively are
 $\text{C}_2\text{H}_5\text{OH} \xrightarrow{\text{KMnO}_4/\text{H}^+} \text{X} \xrightarrow[\text{H}_2\text{SO}_4/\Delta]{\text{Y}} \text{CH}_3\text{COOC}_2\text{H}_5$
 1) CH_3OH , $\text{C}_2\text{H}_5\text{OH}$ 2) CH_3CHO , CH_3OH
 3) $\text{CH}_2=\text{CH}_2$, CH_3-COOH 4) CH_3COOH , $\text{C}_2\text{H}_5\text{OH}$
65. $\text{C}_2\text{H}_5\text{Cl} \xrightarrow{\text{aqKOH}} \text{A} \xrightarrow{\text{Na}} \text{B} \xrightarrow{\text{C}_2\text{H}_5\text{Cl}} \text{C}$ identify C in the above reaction
 1) $\text{C}_2\text{H}_5\text{ONa}$ 2) $\text{C}_2\text{H}_5\text{OH}$ 3) $\text{C}_2\text{H}_5-\text{O}-\text{C}_2\text{H}_5$ 4) C_4H_{10}

66. A fuel cell involves combustion of the butane at 1 atm and 298 K

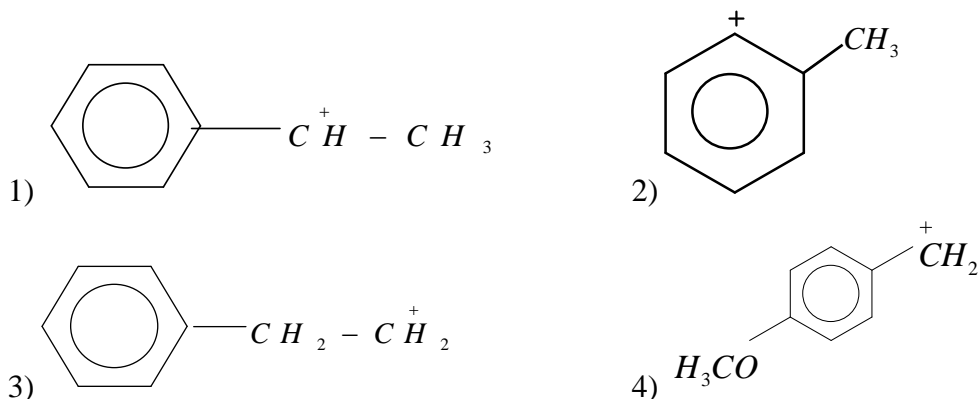


What is E^0 of the cell?

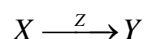
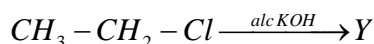
- 1) +4.74V 2) +0.547V 3) +1.09V 4) +4.37V

67. For which of the following, the units of rate constant and rate of reaction of same
 1) Zero order 2) First order 3) second order 4) Third order
68. The density of an ideal gas is 0.03 g/cm^3 , its pressure is 10^6 dy/cm^2 . What is its R.M.S velocity in (Cm/s)
 1) 10^8 2) 3×10^4 3) 1×10^6 4) 1×10^4
69. 100 g of lime stone on heating produced 22g of CO_2 . The percentage of CaCO_3 in lime stone is
 1) 80% 2) 60% 3) 50% 4) 87.66%
70. For the reaction $2\text{H}_2(\text{g}) + \text{O}_2(\text{g}) \rightarrow 2\text{H}_2\text{O}(\text{g})$; $\Delta H = -571 \text{ KJ}$ bond energy of (H-H) is 435 KJ and (O=O) is 498 KJ. Then calculate the average bond energy of (O-H) bond using the above data
 1) 484 KJ 2) 884 KJ 3) 271 KJ 4) 279 KJ
71. The correct order of electrical conductivity of alkali metal ions in aqueous solution is
 1) $\text{Li}^+ > \text{Na}^+ > \text{K}^+ > \text{Rb}^+ > \text{Cs}^+$ 2) $\text{Li}^+ < \text{Na}^+ < \text{K}^+ < \text{Rb}^+ < \text{Cs}^+$
 3) $\text{Li}^+ > \text{Na}^+ < \text{K}^+ < \text{Rb}^+ < \text{Cs}^+$ 4) $\text{Li}^+ < \text{Na}^+ > \text{K}^+ > \text{Rb}^+ > \text{Cs}^+$
72. Which of the following statement is correct
 1) Atomic radius of Na is greater than that of Mg.
 2) Metallic bond in Mg is stronger than the metallic bond in Na
 3) Melting and boiling points of Mg are greater than that of Ca
 4) Mg and Ca are most abundant elements among the alkaline earth metals
 The correct statements are
 1) III, IV 2) I, II, IV 3) II, IV 4) I, IV
73. Bond length of H-I is 1.6 \AA and its observed dipole moment is 0.38D. Then the percentage of ionic character nearly
 1) 5 2) 8 3) 10 4) 15
74. The ionic radii (in A^0) of N^{3-} , O^{2-} and F^- are respectively
 1) 1.36, 1.4 and 1.71 2) 1.36, 1.71 and 1.4
 3) 1.71, 1.4 and 1.36 4) 1.71, 1.36 and 1.4
75. The method of Zone refining of metals is based on the principle of
 1) Greater mobility of the pure metal than that of impurity
 2) Higher melting point of the impurity than that of the pure metal
 3) Greater conductivity of solid metal than that of impurity
 4) Greater solubility of the impurity in the molten state than in solid state of metal
76. EAN (effective atomic number) are not equal in which of the following pair
 1) $[\text{Ni}(\text{CO})_4]$, $[\text{Fe}(\text{CN})_6]^{4-}$ 2) $[\text{Ni}(\text{en})_2]$, $[\text{Fe}(\text{H}_2\text{O})_6]^{2+}$
 3) $[\text{Co}(\text{CN})_6]^{3-}$, $[\text{Fe}(\text{CN})_6]^{4-}$ 4) $[\text{Ni}(\text{en})_2]$, $[\text{Cu}(\text{CN})_4]^{2-}$
77. Hexaquo titanium (111) chloride is represented as
 1) $[\text{Ti}(\text{H}_2\text{O})_6]\text{Cl}_3$ 2) $[\text{TiCl}_3]6\text{H}_2\text{O}$ 3) $[\text{Ti}(\text{H}_2\text{O})_5\text{Cl}]\text{Cl}_2$ 4) $[\text{Ti}(\text{H}_2\text{O})_3\text{Cl}_3]$
78. Which of the following electrolytes is most effective in the coagulation of gold solution?
 1) NaNO_3 2) $\text{K}_4[\text{Fe}(\text{CN})_6]$ 3) Na_3PO_4 4) MgCl_2
79. A aqueous solution freezes at -1.86°C , ($K_f=1.86$, $K_b=0.512$) what is the elevation in boiling point?
 1) 0.186 2) 0.512 3) 0.86 4) 0.0512
80. A metal crystallizes in a bcc lattice. Its unit cell edge length is about 3 \AA and its molar mass is about 60 g/mol. The density of the metal is
 1) 7.4 2) 6.2 3) 9.3 4) 12.4
81. The position of Br in the compound $\text{CH}_3 - \text{CH} = \text{CHC}(\text{Br})(\text{CH}_3)_2$ is
 1) Allyl 2) Aryl 3) Vinyl 4) Secondary

82. The most stable carbocation is



83. $CaC_2 + 2H_2O \rightarrow X$



In this reaction the reagent 'Z' is

- 1) $Con\ H_2SO_4$ 2) $LiAlH_4$ 3) $Pd+BaSO_4$ 4) $(Zn-Hg)+\ ConHCl$

84. $C_2H_6 \xrightarrow{(CH_3COO)_2Mn} X \xrightarrow{PCl_5} Y \xrightarrow[Anh.\ AlCl_3]{C_6H_6} Z$. Identify X, Y, Z.

- 1) $CO_2, COCl, C_6H_5COCl$ 2) $CH_3CHO, CH_3CH_2Cl, C_6H_5CH_2COCl$
 3) $CH_3COOH, CH_3COCl, C_6H_5COCH_3$ 4) $HCOOH, HCOCl, C_6H_5CHO$

85. In PO_4^{3-} ion the formal charge on each oxygen atom and P-O bond order respectively are

- 1) -0.75, 1.25 2) -3, 1.25 3) -0.75, 1 4) -0.75, 0.6

86. The statements regarding hydrides of VI-A group elements are

- i) The order of volatility $H_2O < H_2Te < H_2Se < H_2S$
 ii) The order of boiling point $H_2O > H_2Te > H_2Se > H_2S$
 iii) The order of bond angles $H_2O > H_2S > H_2Se > H_2Te$

The correct combination is

- 1) Only (i) is correct 2) (ii) and (iii) are correct
 3) (i) and (iii) are correct 4) All are correct

87. The halogen having greenish yellow gas reacts with hot and concentrated NaOH solution and give products. The oxidation state of that halogen changes from

- 1) 0 to -1 2) 0 to +5 3) -1 to +1 4) 0 to -1 and +5 states

88. The distribution of electrons in metal ion in $[Mn(H_2O)_6]^{2+}$ in splitted d- orbitals is

- 1) $t_{2g}^5 e_g^0$ 2) $t_{2g}^3 e_g^2$ 3) $t_{2g}^2 e_g^3$ 4) $t_{2g}^4 e_g^1$

89. Number of σ bonds present in meta borate ion and borazole are

- 1) 14, 15 2) 14, 12 3) 18, 12 4) 18, 15

90. Name of structure of silicate in which three oxygen atoms of $[SiO_4]^{4-}$ are shared is

- 1) Pyro silicate 2) Sheet silicate
 3) Linear chain silicate 4) Three dimensional silicate

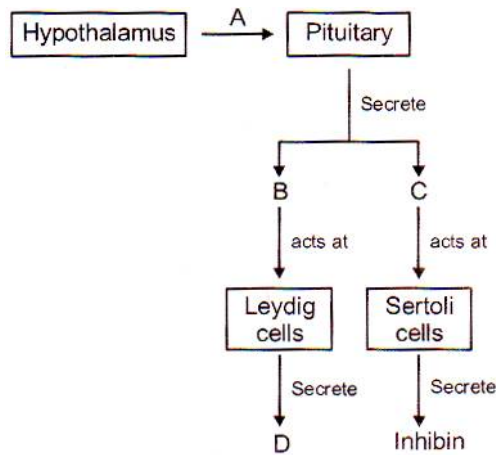
BIOLOGY

91. One of the following serve as quick referral systems in taxonomical studies.

- 1) Flora 2) Manuals 3) Herbaria 4) Monographs

92. Study the flow chart. Name the hormones labeled as A, B, C, D at each stage

Choose the correct option



- | A | B | C | D |
|------------------|------|----------|--------------|
| 1) Gn-RH | ICSH | Androgen | FSH |
| 2) Gn-RH | LH | FSH | Androgens |
| 3) Gonadotropins | LH | FSH | Testosterone |
| 4) Gn-RH | FSH | LH | Androgens |

93. Conidia are

- | | |
|------------------------------|-------------------------------|
| 1) Exogenous, asexual spores | 2) Endogenous, asexual spores |
| 3) Exogenous, sexual spores | 4) Endogenous, sexual spores |

94. Identify the hormones that are secreted in large amount prior to ovulation.

- | A. LH | B. FSH | C. Estrogen | D. Progesterone |
|-----------|-----------------|--------------------|------------------|
| 1) A only | 2) A and B only | 3) A, B and C only | 4) A, B, C and D |

95. Identify the wrong sentence

- | | |
|--|---|
| 1) Ovules are ategmic in gymnosperms | 2) N ₂ fixing coralloid roots are found in Cycas |
| 3) Mycorrhizal roots are seen in Pinus | 4) Endosperm is triploid in angiosperms |

96. A sexually transmitted disease that can be treated with antibiotics is

- | | | | |
|------------------|------------------|-------------|-------------------|
| 1) Genital warts | 2) Hepatitis - B | 3) Syphilis | 4) Trichomoniasis |
|------------------|------------------|-------------|-------------------|

97. Match the following

Set-I

- A. Stem tendril
- B. Leaf tendril
- C. Phylloclade
- D. Phyllode

Set-II

- 1. Watermelon
 - 2. *Opuntia*
 - 3. *Acacia melanoxylon*
 - 4. Pea
- 1) A-1, B-2, C-3, D-4 2) A-1, B-4, C-2, D-3 3) A-2, B-4, C-3, D-1 4) A-4, B-1, C-2, D-3

98. Lactational amenorrhoea is a natural way of birth spacing. It is due to the high level of

- | | |
|------------------------|-----------------|
| 1) FSH and LH hormones | 2) Estrogen |
| 3) Prolactin | 4) Progesterone |

99. Ovary is half- superior in

- | | | | |
|---------------|---------------|---------------|---------------|
| a) Mustard | b) Peach | c) Cucumber | d) Rose |
| e) Brinjal | f) Plum | | |
| 1) b, d and e | 2) a, b and f | 3) b, d and f | 4) b, c and f |

100. Which of the following method is employed to assist the couple where there are problems with the sperms such as decrease in sperm count?

- | A. ZIFT | B. GIFT | C. ICSI | D. AI |
|-----------------|-----------------|-----------|-----------|
| 1) A and B only | 2) C and D only | 3) C only | 4) D only |

101. Ebroyophytic, tracheoptytic, archegoniate, cryptogams are

- | | | | |
|-------------------|----------------|----------------|------------------|
| 1) Spermatophytes | 2) Gymnosperms | 3) Angiosperms | 4) Pteridophytes |
|-------------------|----------------|----------------|------------------|

102. Which of the following are present in the muscles that exhibit high intensity contractions?
- High myoglobin content
 - Low myoglobin content
 - Plenty of mitochondria
 - A few mitochondria
 - More amount of sarcoplasmic reticulum
 - Less amount of sarcoplasmic reticulum
- 1) A, C and E 2) B, D and F 3) A, C and F 4) B, D and E
103. The placentation not found in unilocular ovary is
- 1) Parietal 2) Basal 3) Marginal 4) Axile
104. Arrange the following events of 'cross bridge cycle' in an order
- Power stroke
 - Another ATP binds to myosin head
 - P₁ released
 - Myosin head binds to active site and cross bridge formed
 - Energy released from hydrolysis of ATP in myosin head
 - ADP released
 - Myosin head releases active site
- 1) D, E, A, F, B, C, G 2) E, D, F, A, C, B, G
3) B, D, E, F, A, C, G 4) E, D, C, A, F, B, G
105. Living component in the xylem and dead component in the phloem respectively are
- 1) Xylem fibres and phloem parenchyma 2) Xylem parenchyma and phloem fibres
3) Tracheids and phloem fibres 4) Xylem parenchyma and sieve cells
106. Which of the following cranial nerves innervate the muscles that are originated from ectoderm?
- 1) Optic 2) Pathetic 3) Occulomotor 4) Abducens
107. Vascular bundles are conjoint, open with endarch protoxylem are found in
- 1) Dicot stem 2) Dicot root 3) Monocot stem 4) Monocot root
108. Which of the following end products of digestion are absorbed against concentration gradient into the cells of villi?
- 1) Glucose, amino acids 2) Fructose, amino acids
3) Amino acids 4) Water
109. The correct sequence of stages in cell cycle is
- 1) G₁ G₂ S M 2) G₁ S G₂ M 3) G₁ G₂ M S 4) G₁ S M G₂
110. Match the following
- | | |
|---------------------------|---|
| List – A | List – B |
| A. Cricoid cartilage | i) Smallest cartilages |
| B. Thyroid cartilage | ii) Paired cartilages |
| C. Corniculate cartilages | iii) ventral and lateral walls of larynx |
| D. Cuneiform cartilages | iv) Largest cartilage |
| | v) Lower and posterior part of wall of larynx |
| 1) A-i, B-iv, C-ii, D-v | 2) A-v, B-iii, C-ii, D-i |
| 3) A-v, B-iv, C-i, D-iii | 4) A-v, B-iii, C-i, D-ii |
111. Arrange the following in decreasing order based on the number of layers present around them
- Ribosome
 - Vacuole
 - Mitochondrion
 - Endospore of bacterium
- 1) I II III IV 2) II I III IV 3) IV III II I 4) IV III I II

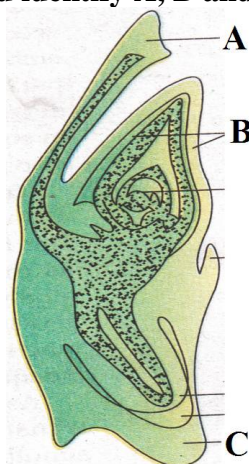
112. **Statement 1 : Emphysema is a disorder in which alveolar walls are damaged.**
Statement 2 : The lungs show smaller but fewer alveoli and more fibrous and less elastic
1) Both the statements are true
2) Both the statements are false
3) Statement 1 is true
4) Statement 2 is true
113. **Arrange the following series descendingly based on the number of cohorts (orders)**
I) Heteromerae II) Bicarpeolatae III) Thalamiflorae IV) Calyciflorae
1) I II IV III
2) III IV II I
3) III IV I II
4) IV III II I
114. **Functional Residual capacity =**
1) TV + IRV + ERV
2) VC + RV
3) ERV + RV
4) TV + IRV
115. **Identify the wrong pair regarding secondary metabolites**
1) Alkaloid-Codeine
2) Toxin-Ricin
3) Lectin-Concanavalin A
4) Drug-Abrin
116. **Flat T – wave in ECG indicates.**
1) Hyperkalemia
2) Hypokalemia
3) Hypercalcemia
4) Hypocalcemia
117. **A ds DNA of 170 A⁰ length consists of 15% Adenine. The number of hydrogen bonds existed in that DNA is**
1) 125
2) 135
3) 130
4) 140
118. **Which of the following statements are correct?**
A. Exchange of NaCl and H₂O takes place only through the descending limb of vasa recta
B. Exchange of NaCl and H₂O takes place through both descending and ascending limbs of vasa recta
C. K⁺ ion reabsorption takes place through proximal convoluted tubule.
D. ANF inhibits the secretion of renin and aldosterone
1) A, C, D
2) B, C, D
3) C, D
4) BD
119. **Argininosuccinase enzyme belongs to major class**
1) Hydrolases
2) Lyases
3) Ligases
4) Transferases
120. **Necrosis of cardiac muscle tissue leads to**
1) Heart failure
2) Heart attack
3) Chest pain
4) Ischemia
121. **The correct sequence of events that occur in Meiosis I is**
I) Synapsis II) Crossing over
III) Terminalisation IV) Segregation of chromosomes
1) I II IV III
2) I III II IV
3) I II III IV
4) II I III IV
122. **Which of the following statements are correct?**
A. The left ward shift of oxygenhaemoglobin dissociation curve indicates that the haemoglobin has an increased affinity for oxygen
B. The plateau portion of oxygenhaemoglobin dissociation curve is the range that exists at the pulmonary capillaries
C. The steep portion of curve is the range that exists at the systemic capillaries
D. In a resting person [pO₂ = 40 mm Hg], haemoglobin always carries about 75% oxygen.
1) ABC
2) BCD
3) AD
4) ABCD
123. **Match the following**
Set-I Set-II
A. Bryophyllum
B. Agave
C. Water hyacinth
D. Ginger
I. Offset
II. Rhizome
III. Bulbil
IV. Leaf buds
1) A-I, B-II, C-III, D-IV
2) A-IV, B-III, C-I, D-II
3) A-IV, B-III, C-II, D-I
4) A-III, B-IV, C-I, D-II
124. **How many bones are present in pectoral girdle and pelvic girdle respectively?**
1) 4, 6
2) 6, 6
3) 4, 2
4) 5, 6

125. If leaf cell of onion consists of 16 chromosomes, how many chromosomes are present in the endosperm cell of onion?
 1) 8 2) 16 3) 24 4) 48
126. What is the name of the region of the brain that is responsible for the functions like breathing, heart beat and blood pressure?
 1) Amygdala 2) Brain stem 3) Cerebrum 4) Both 1 and 2
127. Identify the correct sentence
 1) Xenogamy occurs in dioecious plants only
 2) In the plant with bisexual flowers autogamy only occurs
 3) Autogamy occurs in bisexual flowers only
 4) Either autogamy or geitonogamy occurs in dioecious plants
128. Match the following

List - A	List - B
A. Most convincing evidence in favour of organic evolution.	i. Atavistic organs
B. Strongly support the concept on organic evolution.	ii. Evidences from cell and molecular biology.
C. Clearly explain the path of evolution.	iii. Vestigial organs
D. The most detailed and convincing evidence in favour of biological evolution	iv. Connecting links

- 1) A – iii, B – iv, C – i, D – ii 2) A – i, B – iii, C – iv, D – ii
 3) A – ii, B – i, C – iii, D – iv 4) A – iii, B – i, C – iv, D – ii

129. Observe the following diagram and identify A, B and C in the figure respectively



- 1) Coleoptile, Epiblast, Coleorhiza 2) Coleoptile, Shoot apex, Coleoptile
 3) Coleorhiza, Epiblast, Coleoptile 4) Scutellum, Coleoptile, Coleorhiza
130. The dynamic nature of species was proposed by
 1) Author of “The Origin of Species” 2) Author of “Natural History”
 3) Author of “Systema Naturae” 4) Author of “Historia Generalis Plantarum”
131. Production of seeds without fertilization is called
 1) Polyembryony 2) Apomixis 3) Parthenocarpy 4) Amphimixis
132. In the analysis of species area relationship among tropical rain forest, if the slope is more than 45° the value of ‘Z’ is
 1) 0.6 2) 1 3) 1.2 4) 1.7
133. Pioneers in xerarch and hydrarch successions respectively are
 1) Bryophytes and Lichens 2) Lichens and Phytoplanktons
 3) Lichens and bryophytes 4) Lichens and submerged plants
134. In which of the following organisms “blind sac plan” was first formed?
 1) Cnidarians 2) Flat worms 3) Nematodes 4) Chordates
135. Drought evaders or escapers are
 1) Ephemerals 2) True xerophytes 3) Non-succulents 4) Succulents

- 136. Primary induction can not be found in**
 1) Pseudocoelomates 2) Schizocoelomates 3) Eucoelomates 4) Human beings
- 137. In pteris, each sorus is protected by the reflexed margin of the fertile leaflet called**
 1) Ramenta 2) Indusium 3) False indusium 4) fronds
- 138. Epididymis is lined with**
 1) Stratified cuboidal epithelium 2) Pseudostratified ciliated epithelium
 3) Pseudostratified non ciliated epithelium 4) Ciliated columnar epithelium
- 139. Arrange the following in ascending order based on their imbibing capacities**
a) Wheat grains b) Cotton fibres c) Pea seeds
 1) b, a, c 2) c, a, b 3) a, b, c 4) c, b, a
- 140. Which of the following statements is correct?**
 1) Histamine acts as vasodilator and bronchodilator
 2) Histamine and bradykinin act as vasoconstrictors and bronchoconstrictors
 3) Histamine acts as vasodilator and bronchoconstrictor
 4) Serotonin acts as vasoconstrictor and bronchoconstrictor
- 141. The ratio of e^- , H^+ and ATP required for conversion of N_2 into $2NH_3$ is**
 1) 1:2:2 2) 1:1:1 3) 1:1:2 4) 2:1:2
- 142. If 'the most abundant serum protein' level falls in blood plasma.**
 1) Hydrostatic pressure increases 2) Hydrostatic pressure decreases
 3) Oncotic pressure decreases 4) Colloidal osmotic pressure increases
- 143. Inhibition of cell division occurs due to lack or low level of**
 1) N Zn Mo 2) N K S Mo 3) K N Zn Mo 4) Ca Mg K
- 144. Match the following.**
- | | |
|-----------------------|--|
| List – A | List – B |
| A. Basophils | i. Large cytoplasmic granules |
| B. Acidophils | ii. Peripheral cytoplasm |
| C. Neutrophils | iii. Phagocytes |
| D. Lymphocytes | iv. Small cytoplasmic granules |
| E. Monocytes | v. Irregular cytoplasmic granules |
- | | | | | | |
|----|----------|----------|----------|----------|----------|
| | A | B | C | D | E |
| 1) | v | i | ii | iv | iii |
| 2) | i | v | iv | ii | iii |
| 3) | v | i | iii | iv | ii |
| 4) | v | i | iv | ii | iii |
- 145. If 2 glucose molecules are formed as net gain through Calvin cycle, how many Erythrose 4-phosphate molecules are formed in the C_3 cycle ?**
 1) 2 2) 4 3) 6 4) 8
- 146. The people who live at higher altitudes generally show**
 1) Polycythemia 2) Erythrocytopenia 3) Leucocytopenia 4) Erythrocytosis
- 147. Elements involved in photolysis of water are**
a) Ca^{2+} b) Mn^{2+} c) Cl^- d) K^+
 1) a and b only 2) b and c only 3) a, b and c 4) b, c and d
- 148. Statocysts occur in**
 1) Hydra 2) Adamsia 3) Rhizostoma 4) Physalia
- 149. The ratio of substrate level phosphorylations that occur during glycolysis and Krebs cycle respectively is**
 1) 1:1 2) 2:1 3) 1:2 4) 3:1
- 150. Match the following**
- | | |
|------------------------|----------------------------------|
| List-A | List-B |
| A. Echinococcus | i) Syncytial epidermis |
| B. Ancylostoma | ii) Collagenous cuticle |
| C. Convoluta | iii) Bifurcated intestine |

D. Wuchereria

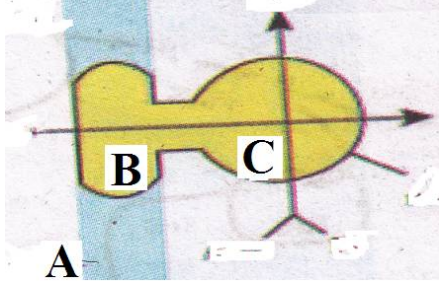
iv) Syncytial tegument

E. Bilharzia

v) Rhabdites

- | | A | B | C | D | E |
|----|----|----|-----|----|-----|
| 1) | IV | V | I | II | III |
| 2) | IV | I | V | II | III |
| 3) | IV | II | III | I | V |
| 4) | V | I | III | II | IV |

151. Observe the figure and identify A, B and C respectively



- | | |
|---|--|
| 1) Inner mitochondrial membrane, F_1, F_0 | 2) Inner mitochondrial membrane, F_0, F_1 |
| 3) Mitochondrial matrix, F_0, F_1 | 4) Outer membrane of mitochondrion, F_0, F_1 |

152. Given below are four matchings of an animal and its kind of respiratory organ

A. Silver fish – Trachea B. Scorpion – Book lungs

C. Sea squirt – Pharyngeal gills

D. Dolphin – gills

The correct matchings are

- | | | | |
|------------|---------------|------------|------------|
| 1) A and B | 2) A, B and C | 3) B and D | 4) C and D |
|------------|---------------|------------|------------|

153. Identify wrong statement

- 1) NAA and 2,4-D are synthetic auxins
- 2) Gibberellins promote bolting in Cabbages
- 3) Ethylenepromotes female flowers in cucumbers
- 4) Auxins help to prevent the abscission of older mature leaves and fruits

154. Identify the incorrect matching of a class and its characters.

- 1) Chondrichthyes – amphicoelous vertebrae
- 2) Amphibia – Sternum, columellauris
- 3) Reptilia – Sinus venosus, micro lecithal eggs
- 4) Mammalia – metanephric kidneys, Uriotelic

155. One of the following bacteria play a great role in re cycling nutrients like nitrogen, phosphorous, iron and sulphur

- | | |
|---------------------------------|----------------------------------|
| 1) Chemo-autotrophic bacteria | 2) Photo- autotrophic bacteria |
| 3) Photo-heterotrophic bacteria | 4) Chemo- heterotrophic bacteria |

156. In the life cycle of *Entamoeba*, karyokinesis takes place during

A. Trophozoite stage B. Pre cystic stage C. Cystic stage D. Metacystic stage

- | | | | |
|---------------|---------------|---------------|---------------|
| 1) A, B and C | 2) A, B and D | 3) B, C and D | 4) A, C and D |
|---------------|---------------|---------------|---------------|

157. Potato spindle tuber disease is caused by

- | | | | |
|----------|-----------|--------------|-----------|
| 1) Prion | 2) Virion | 3) Bacterium | 4) Viroid |
|----------|-----------|--------------|-----------|

158. The respective enzymes secreted by *Entamoeba* and *Plasmodium* are

- | | |
|------------------------------|--------------------------------|
| 1) Histolysins and lypolytic | 2) Proteolytic and cytolytic |
| 3) Cytolytic and proteolytic | 4) Proteolytic and histolysins |

159. In F_2 generation of Mendel's dihybrid cross the percentage of recombinants formed is

- | | | | |
|--------|----------|--------|----------|
| 1) 25% | 2) 62.5% | 3) 50% | 4) 37.5% |
|--------|----------|--------|----------|

160. One of the following is the set of infective stages to erythrocytes in the life cycle of malaria parasite

- 1) Cryptozoite, micrometacryptozoite, erythrocyticmerozoite
- 2) Cryptozoite, micromatacryptozoite, sporozoite
- 3) Cryptozoite, micrometacryptozoiteerythrocyticmerozoite
- 4) Cryptozoite, micrometacryptozoite, erythrocyticmerozoite, hypnozoite

161. The fraction of double homozygotes in the F₂ of Mendel's dihybrid cross is

- 1) $\frac{1}{4}$ 2) $\frac{1}{8}$ 3) $\frac{1}{16}$ 4) $\frac{1}{2}$

162. In cockroach due to the contraction of which muscles wings are depressed and segments are telescoped respectively.

- 1) Dorsoventral muscles, ventral longitudinal muscles
 2) Dorsolongitudinal muscles, ventral longitudinal muscles
 3) Dorsoventral muscles
 4) Ventral longitudinal muscles, Dorsolongitudinal muscles

163. Match the following

Set-I

Set-II

- | | |
|------------------------------------|-------------------------|
| A. $\phi \times 174$ Bacteriophage | 1. $6.6 \times 10^9 bp$ |
| B. Bacteriophage lambda | 2. $4.6 \times 10^6 bp$ |
| C. <i>E.coli</i> | 3. 48502bp |
| D. Diploid content of Human DNA | 4. 5386 nucleotides |
| | 5. $3.3 \times 10^9 bp$ |

- 1) A-4, B-3, C-1, D-5 2) A-4, B-3, C-1, D-4 3) A-4, B-3, C-2, D-1 4) A-4, B-3, C-2, D-5

164. Which of the following activities occur in the secretory part of Malpighian tubule?

- 1) Secretion 2) Secretion and absorption
 3) Secretion and reabsorption 4) Reabsorption

165. AAA, AAG are the codons for

- 1) Leucine 2) Lysine 3) Cysteine 4) Serine

166. Match the following

List – I	List – II
A. Stable population	I. Triangular shape
B. Declining population	II. Exponential growth curve
C. Density dependent growth curve	III. Sigmoid growth curve
D. Density independent growth curve	IV. Urn shape
E. Growing population	V. Bell shape

- | | A | B | C | D | E |
|----|----|-----|-----|-----|---|
| 1) | V | IV | III | II | I |
| 2) | V | IV | II | III | I |
| 3) | IV | V | III | II | I |
| 4) | IV | III | II | III | I |

167. Identify the correct statement

- 1) Ampicillin resistant gene is present at Bam H1 site on ^{pBR} 322 cloning vector
 2) Gene gun method is used to introduce alien DNA into plant host cells
 3) Lysozyme is used to break the fungal cell wall
 4) Restriction endonuclease enzyme added methyl groups to DNA

168. Down's syndrome is caused by an extra copy of chromosome no 21. What percentage of offspring produced by an affected mother and a normal father would be affected by this disorder?

- 1) 100% 2) 75% 3) 50% 4) 25%

169. Down stream processing includes

- 1) Separation and purification 2) Denaturation and purification
 3) Annealing and purification 4) Denaturation and separation

170. A male human is heterozygous for autosomal genes 'A' and 'B' and is also hemizygous for hemophilic gene 'h'. What proportion of his sperms will be with 'abh'?

- 1) 1/8 2) 1/32 3) 1/16 4) 1/4

171. Select the wrong pair

- 1) Round up ready soyabean – herbicide tolerant
- 2) Transgenic tomato- resistant to *Phytophthora*
- 3) Bt . Cotton – Resistant to insects
- 4) Transgenic papaya – Resistant to ring spot virus

172. Match the following

Part – I

- A) Acromegaly
- B) Gigantism
- C) Addison’s
- D) Dwarfism
- E) Ejection of milk
- F) Cushing’s

Part – II

- I) Under secretion of GH in child
- II) Oxytocin
- III) Over secretion of glucocorticoid
- IV) Over secretion of GH in child
- V) Over secretion of GH in adult
- VI) Hyposecretion of Glucocorticoid

- | | A | B | C | D | E | F |
|----|---|----|----|----|-----|----|
| 1) | V | IV | VI | I | III | II |
| 3) | V | IV | VI | II | III | I |

- | | A | B | C | D | E | F |
|----|---|----|----|----|-----|-----|
| 2) | V | IV | VI | I | II | III |
| 4) | V | IV | VI | II | III | I |

173. Select the pair of correct combinations

- I) Cauliflower- PusaShubhra – Resistance to black rot
- II) Cowpea – PusaKomal – Resistance to white rust
- III) Wheat – Himagiri – Resistance to hill bunt
- IV) Brassica – PusaGaurav – Resistance to white rust

- 1) I II 2) I III 3) I IV 4) III IV

174. If a Rh positive Homozygous man marries a woman heterozygous for Rh, what is the percentage of the children affected by erythroblastosis foetalis

- 1) Zero 2) 25% 3) 50% 4) 75%

175. Match the following

Set –I

- A) Vitamin A enriched crop
 - B) Vitamin C enriched crop
 - C) Iron and calcium enriched crop
 - D) Protein enriched crop
- 1) A-1 B-2 C-3 D-4 2) A-4 B-3 C-2 D-1

Set- II

- 1. Garden peas
 - 2. Spinach
 - 3. Bitter gourd
- 3) A-4 B-3 C-1 D-2 4) A-3 B-4 C-2 D-1

176. If a normal female whose father is color blind marries a normal person. In the Progeny percentage of color blind sons are

- 1) 0% 2) 100% 3) 25% 4) 50%

177. The following are produced without distillation

- a) Wine b) Brandy c) Beer d) Whisky
- 1) a, b 2) a, c 3) a, d 4) b, d

178. In a population in Hardy-Weinberg equilibrium, if the frequency of one allele A of a gene with only two allelic forms is 0.2, what is the frequency of heterozygotes for that gene in that population?

- 1) 0.8 2) 0.16 3) 0.32 4) 0.48

179. Select the correct combinations

- I) *Aspergillusniger* – Fungus - Citric acid
- II) *Acetobacteraceti* – Bacterium – Acetic acid
- III) *Clostridium butylicum* – Fungus – Butyric acid
- IV) *Lactobacilus* – Bacterium – Lactic acid

- 1) I II IV 2) II III IV 3) I III IV 4) I II III

180. Abingdon tortoise in Galapagos islands become extinct within a decade after goats were introduced on the island, this is an example for

- 1) Parasitism 2) Coexistence
- 3) Competitive exclusion 4) Commensalism