



meritroot
STRONG ROOTS CREATE MERIT

Time : 3.00Hrs

200 MCQs PATTERN

Max.Marks.720

INSTRUCTIONS

1. This test will be a 3 hours Test, Maximum Marks 720M.
2. This test consists of Physics, Chemistry, Botany and Zoology questions with equal weightage of 180 marks.
3. Each question is of 4 marks.
4. There are four parts in the question paper, consisting Part-I Physics (Q.no.1 to 50), Part-II Chemistry (Q.no.51 to 100), Part-III Botany (Q. no. 101 to 150) and Part-IV Zoology (Q. no.151 to 200). Each part is divided into two Sections, Section A consists of 35 multiple choice questions & Section-B consists of 15 Multiple choice questions, out of these 15 questions candidates can choose to attempt any 10 questions.
5. There will be only one correct choice in the given four choices for each question. For each question 4 marks will be awarded for correct choice, 1 mark will be deducted for incorrect choice and zero mark will be awarded for unattempted question.
6. Any textual, printed or written material, mobile phones, calculator etc. is not allowed for the students appearing for the test.
7. All calculations / written work should be done in the rough sheet provided.

Syllabus

Physics : CLASS XI & XII

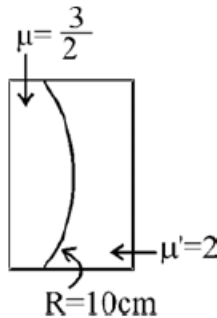
Chemistry : CLASS XI & XII

Biology : CLASS XI & XII

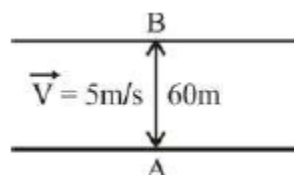


PART-1 : PHYSICS : SECTION-A

1. A solid cylinder of mass M and radius R rolls down an inclined plane of height h . The angular velocity of the cylinder when it reaches the bottom of the plane is :
- (1) $\frac{1}{R}\sqrt{\frac{gh}{2}}$ (2) $\frac{2}{R}\sqrt{\frac{gh}{3}}$ (3) $\frac{1}{R}\sqrt{\frac{2gh}{3}}$ (4) $\frac{3}{R}\sqrt{\frac{gh}{2}}$
2. The stable nucleus which has a radius half of Zn^{64} is –
- (1) Ca^{40} (2) S^{16} (3) Na^{21} (4) Be^8
3. Find out power of the system :-



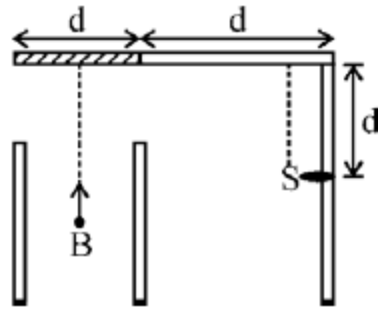
- (1) + 5 D (2) - 5 D (3) + 10 D (4) - 10 D
4. For nuclear reaction :
- $${}_{92}U^{235} + {}_0n^1 \rightarrow {}_{56}Ba^{144} + \dots\dots\dots + 3 {}_0n^1$$
- (1) ${}_{26}Kr^{89}$ (2) ${}_{36}Kr^{89}$ (3) ${}_{26}Sr^{90}$ (4) ${}_{38}Sr^{89}$
5. The width of depletion region in PN-junction diode is 500 nm and an internal electric field is 6×10^5 V/m. What is the kinetic energy which a conduction electron must have in order to diffuse from the N side to P side :-
- (1) 0.03 eV (2) 0.3 eV (3) 0.45 eV (4) 0.6 eV
6. When a resistance of 2 ohm is connected across the terminals of a cell, the current is 0.5 A. When the resistance is increased to 5 ohm, the current is 0.25 A. The e.m.f. of the cell is
- (1) 1.0 V (2) 1.5 V (3) 2.0 V (4) 2.5 V
7. A beam of light consisting of wavelengths 6000\AA and 4500\AA is used in a YDSE with $D = 1\text{m}$ and $d = 1\text{mm}$. Find the least distance from the central maxima, where bright fringes due to the two wavelengths coincide.
- (1) 0.9 mm (2) 1.2 mm (3) 1.8 mm (4) 1.4 mm
8. A man is crossing a river flowing with velocity of 5 m/s. He reaches at points B directly across at a distance of 60m in 5 sec. His velocity in still water should be :-



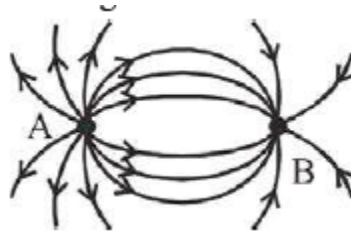
- (1) 12 m/s (2) 13 m/s (3) 5 m/s (4) 10 m/s



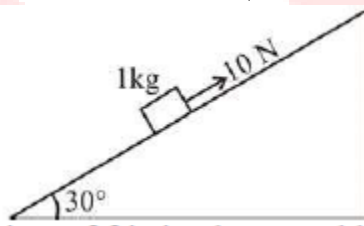
9. Figure shows an over head view of a corridor with a plane mirror M mounted at one end. A burglar B sneaks along the corridor directly towards the centre of the mirror. If $d = 2$ meter, then the distance of B from the mirror at which the security guard S first see him in the mirror is :-



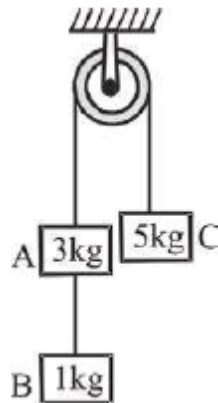
- (1) 1 m (2) 2 m (3) 3 m (4) A
10. The combination of gates shown below produces:-
-
- (1) AND gate (2) XOR gate (3) NOR gate (4) NAND gate
11. A uniform rope of length L and mass m_1 hangs vertically from a rigid support. A block of mass m_2 is attached to the free end of the rope. A transverse pulse of wavelength λ_1 is produced at the lower end of the rope. The wave length of the pulse when it reaches the top of the rope is λ_2 . The ratio λ_2 / λ_1 is :-
- (1) $\sqrt{\frac{m_1}{m_2}}$ (2) $\sqrt{\frac{m_1 + m_2}{m_2}}$ (3) $\sqrt{\frac{m_2}{m_1}}$ (4) $\sqrt{\frac{m_1 + m_2}{m_1}}$
12. If the density of the earth is doubled keeping its radius constant, then acceleration due to gravity will be ($g = 9.8 \text{ m/sec}^2$) :-
- (1) 19.6 m/s^2 (2) 9.8 m/s^2 (3) 4.9 m/s^2 (4) 2.45 m/s^2
13. If De-broglie wavelength of a moving e^- is decreased from 1 \AA to 0.5 \AA , then calculate change in its K.E. in eV :
- (1) 600 eV (2) 450 eV (3) 150 eV (4) 500 eV
14. The spatial distribution of the electric field due to two charges (A and B) is shown in figure. Which one of the following statements is correct?



- (1) A is +ve and B is -ve and $|A| > |B|$.
(2) A is -ve and B is +ve and $|A| = |B|$.
(3) Both are +ve but $A > B$
(4) Both are -ve but $A > B$
15. Mars has a diameter of approximately 0.5 of that of earth and mass of 0.1 of that of earth. The surface gravitational field strength on Mars as compared to that on earth is greater by a factor of :-
(1) 0.1 (2) 0.2 (3) 2.0 (4) 0.4
16. A block of mass 1 kg is pushed up a surface inclined to horizontal at an angle of 30° by a force of 10 N parallel to the inclined surface as shown in the figure. ($g = 10\text{m/s}^2$)



- The coefficient of friction between block and the incline is 0.1. If the block is pushed up by 10 m along the inclined, the work done against force of friction is :-
(1) 8.7 J (2) 10.7 J (3) 7.8 J (4) 12.7 J
17. A body of uniform cross-sectional area floats in a liquid of density thrice its value. The fraction of exposed height will be:
(1) $2/3$ (2) $5/6$ (3) $1/6$ (4) $1/3$
18. A particle is moving with velocity $v=(4t^3 + 3t^2 - 1)\text{m/s}$. The displacement of particle in time $t = 1$ sec to $t = 2$ sec will be :-
(1) 21 m (2) 17 m (3) 13 m (4) 9 m
19. At a pressure of 24×10^5 dyne cm^{-2} , the volume of O_2 is 10 litre and mass is 20 g. The rms velocity will be
(1) 800ms^{-1} (2) 400ms^{-1} (3) 600ms^{-1} (4) Data is incomplete
20. In the adjoining figure, the tension in the string connecting A and B is :-



- (1) g (2) $\frac{g}{9}$ (3) $\frac{8g}{9}$ (4) $\frac{10g}{9}$

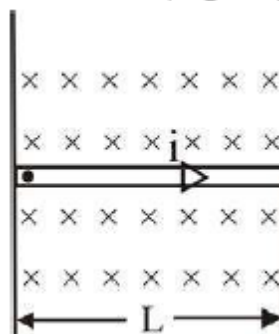
21. A neutron makes a head-on elastic collision with a stationary deuteron. The fractional energy loss of the neutron in the collision is :-

- (1) $16/81$ (2) $8/9$ (3) $8/27$ (4) $2/3$

22. A solenoid of radius R and length L has a current $I = I_0 \cos \omega t$. The value of induced electric field at a distance of r outside the solenoid, is :

- (1) $\frac{\mu_0 n I_0 \omega R^2}{2r} \sin \omega t$ (2) $\frac{\mu_0 n I_0 \omega R^2}{r} \sin \omega t$ (3) $\frac{\mu_0 n I_0 R^2}{2r} \sin \omega t$ (4) Zero

23. A straight conductor of mass m and carrying a current i is hinged at one end and placed in a plane perpendicular to the magnetic field of intensity B as shown in the figure. At any moment if the conductor is let free, then the angular acceleration of the conductor will be :- (neglect gravity)

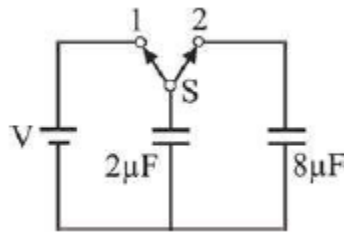


- (1) $\frac{2iB}{3m}$ (2) $\frac{3iB}{2m}$ (3) $\frac{iB}{2m}$ (4) $\frac{3i}{2mB}$

24. If a body is executing simple harmonic motion, then :-

- (1) at extreme position, the total energy must be zero
(2) at equilibrium position, the total energy is in the form of only potential energy
(3) at equilibrium position, the total energy is in the form of only kinetic energy
(4) at extreme position, the total energy is only potential energy

25. A capacitor of $2\mu\text{F}$ is charged as shown in the diagram. When the switch S is turned to position 2, the percentage of its stored energy dissipated is:

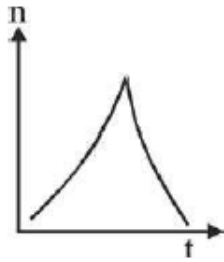


- (1) 0% (2) 20% (3) 75% (4) 80%

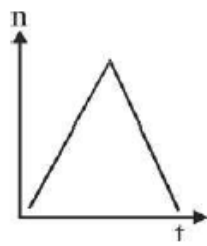
26. The angle between two vectors given by $6\hat{i} + 6\hat{j} - 3\hat{k}$ and $7\hat{i} + 4\hat{j} + 4\hat{k}$ is :-

- (1) $\cos^{-1}\left(\frac{1}{\sqrt{3}}\right)$ (2) $\cos^{-1}\left(\frac{5}{\sqrt{3}}\right)$ (3) $\sin^{-1}\left(\frac{2}{\sqrt{3}}\right)$ (4) $\sin^{-1}\left(\frac{\sqrt{5}}{3}\right)$

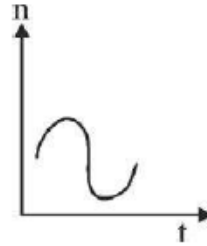
27. A sound source, emitting sound of constant frequency, moves with a constant speed and crosses a stationary observer. The frequency (n) of sound heard by the observer is plotted against time (t). Which of the following graphs represents the correct variation :-



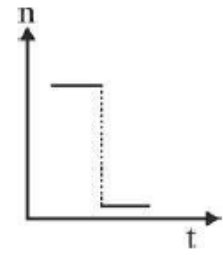
(1)



(2)



(3)



(4)

28. One kilowatt hour is equal to :-

- (1) 3.6×10^6 Joule (2) 3.6×10^5 Joule (3) 10^3 Joule (4) 10^7 Joule

29. A carbon resistor is marked with the rings coloured brown, black, green and gold. The resistance (in ohm) is:

- (1) $3.2 \times 10^5 \pm 5\%$ (2) $1 \times 10^6 \pm 10\%$ (3) $1 \times 10^7 \pm 5\%$ (4) $1 \times 10^6 \pm 5\%$

30. A variable force, given by the 2-dimensional vector $\vec{F} = (3x^2\hat{i} + 4\hat{j})$, acts on a particle. The force is in newton's and x is in metres. What is the change in the kinetic energy of the particle as it moves from the point with coordinates (2,3) to (3, 0) ? (The coordinates are in metres) :-

- (1) -7 Joules (2) Zero (3) +7 J (4) +19 J

31. The de-broglie wavelength of an electron and the wavelength of a photon are the same. The ratio between the energy of the photon and the momentum of the electron is :-

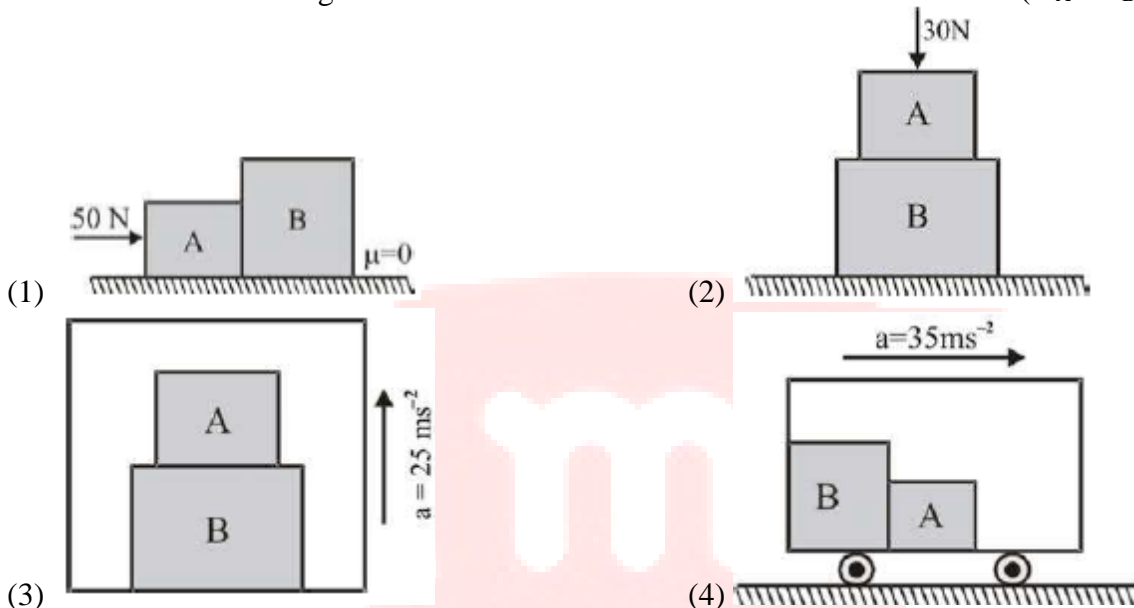
- (1) h (2) c (3) $\frac{1}{h}$ (4) $\frac{1}{c}$

32. We have two spheres one of which is hollow and the other solid. They have identical masses and moment of inertia about their respective diameters. The ratio of their radius is given by:

- (1) 5 : 7 (2) 3 : 5 (3) $\sqrt{3} : \sqrt{5}$ (4) $\sqrt{3} : \sqrt{7}$



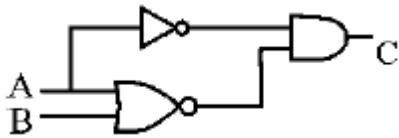
33. Two light wave from to coherent sources superimpose at point A with phase difference 0 & at point B with phase difference of $\pi/2$. Calculate ratio of resultant intensities of point A and B :-
(1) 1 : 1 (2) 2 : 1 (3) 4 : 1 (4) 1 : 4
34. In which of the following cases the contact force between A & B is maximum? ($m_A = m_B = 1\text{kg}$, $g = 10\text{ms}^{-2}$)



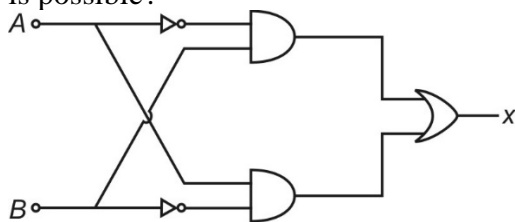
35. If $a = 8 \pm 0.08$ and $b = 6 \pm 0.06$, Let $x = a + b$, $y = a - b$, $z = a \times b$. The correct order of % error in x, y and z
(1) $x = y < z$ (2) $x = y > z$ (3) $x < z < y$ (4) $x > z < y$

PART-1 : PHYSICS : SECTION-B

36. A mass of 100 gm is tied to one end of a string 2 m long. The body is revolving in a horizontal circle making a maximum of 200 revolutions per min. The other end of the string is fixed at the centre of the circle of revolution. The maximum tension that the string can bear is (approximately) :-
(1) 8.76 N (2) 8.94 N (3) 87.6 N (4) 896 N
37. A electromagnetic wave in vacuum has the electric and magnetic fields \vec{E} and \vec{B} which are always perpendicular to each other. The direction of polarization is given by \vec{X} and wave propogation by \vec{K} then
(1) $\vec{X} \parallel \vec{E}$ and $\vec{K} \parallel \vec{E} \times \vec{B}$ (2) $\vec{X} \parallel \vec{B}$ and $\vec{K} \parallel \vec{E} \times \vec{B}$
(3) $\vec{X} \parallel \vec{E}$ and $\vec{K} \parallel \vec{B} \times \vec{E}$ (4) $\vec{X} \parallel \vec{B}$ and $\vec{K} \parallel \vec{B} \times \vec{E}$
38. A resistor of 500Ω and an inductor of 0.5 H are in series with an AC voltage source which is given by $V = 100\sqrt{2} \sin(1000 t)$. The power factor of the combination is :-
(1) $\frac{1}{\sqrt{2}}$ (2) $\frac{1}{\sqrt{3}}$ (3) 0.5 (4) 0.6
39. Output C of the network shown is :-



- (1) $\bar{A} + B$ (2) $\bar{A}.B$ (3) 0 (4) $\overline{A+B}$
40. On heating one end of a rod, the temperature of whole rod will be uniform when :-
(1) $K = 1$ (2) $K = 0$ (3) $K = 100$ (4) $K = \infty$
41. Water is flowing in streamline motion through a horizontal tube. The pressure at a point in a tube is P where the velocity of flow is v . At another point where the pressure is $\frac{P}{2}$, the velocity of flow is (density of water = ρ)
(1) $\sqrt{v^2 + \frac{P}{\rho}}$ (2) $\sqrt{v^2 - \frac{P}{\rho}}$ (3) $\sqrt{v^2 + \frac{2P}{\rho}}$ (4) $\sqrt{v^2 - \frac{2P}{\rho}}$
42. A gas at NTP is suddenly compressed to one fourth of its original volume. If γ is supposed to be $\frac{3}{2}$, then the final pressure is :-
(1) 4 atmosphere (2) $\frac{3}{2}$ atmosphere (3) 8 atmosphere (4) $\frac{1}{4}$ atmosphere
43. Two protons are placed 1 \AA apart. If they are released, what will be the kinetic energy of each proton when they are at large separation :-
(1) $2.56 \times 10^{-19} \text{ J}$ (2) $11.52 \times 10^{-19} \text{ J}$ (3) $23.04 \times 10^{-19} \text{ J}$ (4) $2.56 \times 10^{-28} \text{ J}$
44. A magnetic field can be produced by :-
(1) A moving charge (2) A changing electric field
(3) None of these (4) Both (1) & (2)
45. The average translational energy and the r.m.s. speed of molecules in a sample of oxygen gas at 300K are $6.21 \times 10^{-21} \text{ J}$ and 484 m/s respectively. The corresponding values at 600 K are nearly:(assuming ideal gas behaviour)
(1) $12.42 \times 10^{-21} \text{ J}$, 968 m/s (2) $8.78 \times 10^{-21} \text{ J}$, 684 m/s
(3) $6.21 \times 10^{-21} \text{ J}$, 968 m/s (4) $12.42 \times 10^{-21} \text{ J}$, 684 m/s
46. In a photoelectric experiment a light of wavelength 6000 \AA is incident on a metal surface. When light of wavelength 4000 \AA is incident then the maximum kinetic energy of the emitted photoelectrons is doubled. The work function of the metal is
(1) 2.33 eV (2) 4.03 eV (3) 3.53 eV (4) 1.03 eV
47. In the network of logic gates shown, which of the following input (A, B) and output (x) combinations is possible?

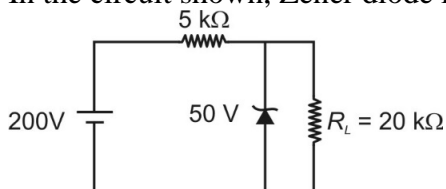


(1) $A = 0, B = 0, x = 1$

(2) $A = 0, B = 1, x = 0$



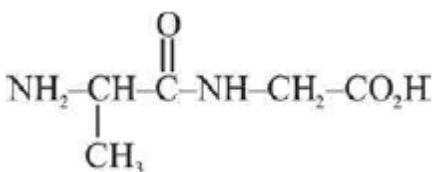
- (3) $A = 1, B = 0, x = 0$ (4) $A = 1, B = 1, x = 0$
48. In the circuit shown, Zener diode is being used as voltage regulator. The current through the diode is



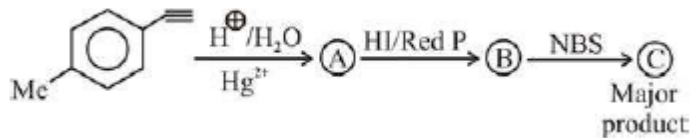
- (1) 25.5 mA (2) 27.5 mA (3) 2.5 mA (4) 30 mA
49. A circular disc X of radius R is made of iron plate of thickness t. Another disc Y of radius 4R is made of iron plate of thickness t/4. The relationship between their moment of inertia I_X and I_Y is
(1) $I_Y = 64 I_X$ (2) $I_Y = 32 I_X$ (3) $I_Y = 16 I_X$ (4) $I_X = I_Y$
50. For a harmonic oscillator the magnitude of maximum acceleration of the particle is π times the maximum speed of the particle. The time period of oscillation of its kinetic energy is
(1) 3 s (2) 2 s (3) 1 s (4) 0.5 s

PART-2 : CHEMISTRY : SECTION-A

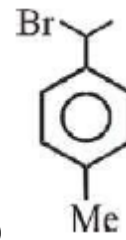
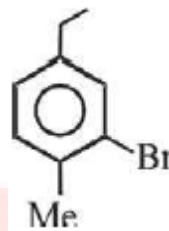
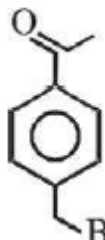
51. The boiling point of an azeotropic mixture of water-ethanol is less than that of both water and ethanol. Then :-
(1) The mixture will show negative deviation from Raoult's law.
(2) The mixture will show positive deviation from Raoult's law
(3) The mixture will show no deviation from Raoult's law
(4) This mixture considered as colloidal solution.
52. If $S + O_2 \longrightarrow SO_2; \Delta H = -298.2 \text{ kJ mol}^{-1}$
 $SO_2 + \frac{1}{2}O_2 \longrightarrow SO_3; \Delta H = -98.7 \text{ kJ mol}^{-1}$
 $SO_3 + H_2O \longrightarrow H_2SO_4; \Delta H = -130.2 \text{ kJ mol}^{-1}$
 $H_2 + \frac{1}{2}O_2 \longrightarrow H_2O; \Delta H = -287.3 \text{ kJ mol}^{-1}$
Then the enthalpy of formation of H_2SO_4 at 298 K is –
(1) –814.4 KJ (2) –650.3 KJ (3) –320.5 KJ (4) –433.5 KJ
53. Dissolving metallic Zn in excess of NaOH produces :-
(1) Na_2ZnO_2 (2) $Zn(OH)_2$ (3) ZnO (4) $Zn(OH)_2$ & Na_2ZnO_2



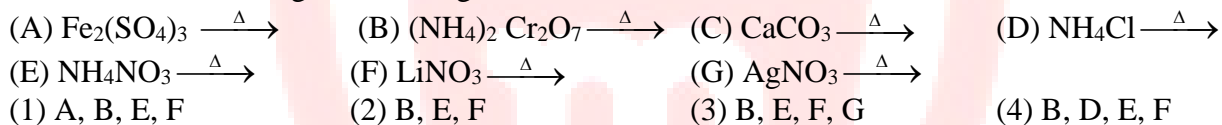
54. Identify the amino acid obtained by hydrolysis of the above compound :
(1) Glycine (2) Alanine (3) Both (1) and (2) (4) None of these
55. A liquid freezes at 300K and boils at 400K. If K_f and K_b values for the liquid are 5 and $2.5 \text{ }^\circ\text{C/molal}$ respectively, then the ratio of latent heat of vaporisation to latent heat of fusion is :-
(1) 1 : 1 (2) 3 : 1 (3) 32 : 9 (4) 9 : 32



Identify C :-



57. Find reactions showing redox change



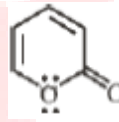
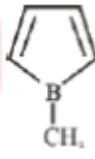
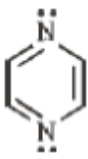
(1) A, B, E, F

(2) B, E, F

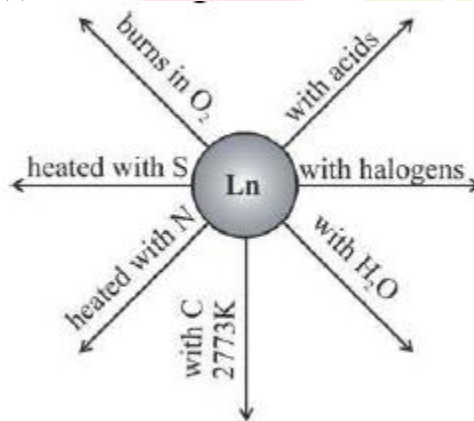
(3) B, E, F, G

(4) B, D, E, F

58. Find out anti aromatic compound among the following :-



59. The number of gaseous product(s) are formed on the basis of following reactions :



(1) 1

(2) 2

(3) 3

(4) 4

60. Teflon is polymer of :-

(1) Tetrafluoro ethane

(2) Tetrafluoro ethane

(3) Acrylonitrile

(4) Caprolactum

61. The percentage of Fe^{+3} ion present in $\text{Fe}_{0.93} \text{O}_{1.00}$ is :

(1) 15%

(2) 5.5%

(3) 10.0%

(4) 11.5%

62. Increasing value of spin only magnetic moments of :-

(I) $[\text{Fe}(\text{CN})_6]^{4-}$

(II) $[\text{Fe}(\text{CN})_6]^{-3}$

(III) $[\text{Cr}(\text{NH}_3)_6]^{3+}$

(IV) $[\text{Ni}(\text{H}_2\text{O})_4]^{2+}$

(1) I < II < III < IV

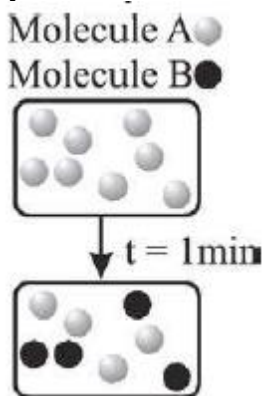
(2) IV < III < II < I

(3) II < III < I < IV

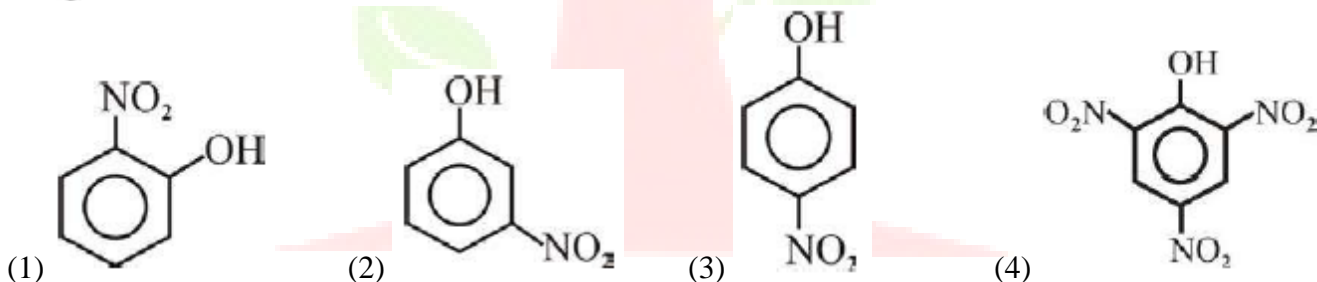
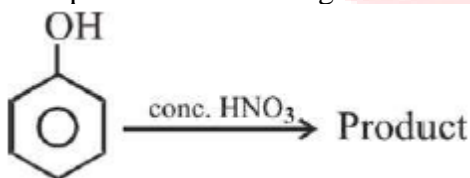
(4) I < II < IV < III



63. The two diagrams below represent snapshots of a very small portion of a first order reaction in which A molecules are being converted to B molecules ($A \rightarrow B$). Which of the following diagrams represents a snapshot of a very small portion of this system at $t = 3 \text{ min}$?



64. Main product of following reaction will be :



65. Select the incorrect statement about silicate's :-

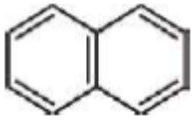


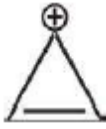
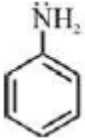
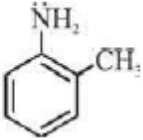
- (1) Beryl an example of cyclic silicate
(2) In Pyrosilicate, only one oxygen atom shared
(3) Formula of single chain silicate is $(\text{Si}_2\text{O}_5)_n^{-2n}$
(4) In single chain silicate two oxygen atom are shared

66. The electronic configuration of calcium ion (Ca^{2+}) is :-

- (1) $1s^2, 2s^2 2p^6, 3s^2 3p^6, 4s^2$
(2) $1s^2, 2s^2 2p^6, 3s^2 3p^6, 4s^0$
(3) $1s^2, 2s^2 2p^6, 3s^2 3p^6, 3d^2$
(4) $1s^2, 2s^2 2p^6, 3s^2 3p^6, 3d^5$

67. Which of following is non-aromatic ?



- (1)  (2)  (3)  (4) 
68. Which of the following is not correct ?
- (1) $R-OH > HC\equiv CH > NH > \text{benzene ring}$ Acidic strength
- (2) $\text{CH}_2-\text{COOH} > \text{CH}_2-\text{COOH} > \text{CH}_2-\text{COOH}$
| F | | Cl | | Br | Acidic strength
- (3)  >  Basic strength
- (4) $\text{CH}_2-\text{CH}_2-\text{COOH} > \text{HCOOH}$
| Cl | Acidic strength
69. The number of asymmetric carbon atoms and the number of optical isomers in $\text{CH}_3(\text{CHOH})_2\text{COOH}$ are respectively :-
(1) 3 and 4 (2) 1 and 3 (3) 2 and 4 (4) 2 and 3
70. Pick out the incorrect match of intermolecular attraction between molecule/ion in the following pairs
(1) HBr and H_2S - Dipole-dipole attraction
(2) Cl_2 and CBr_4 - Dispersion force (London force)
(3) NH_3 and C_6H_6 - Hydrogen bond
(4) I_2 and NO_3^- - Ion-induced dipole attraction
71. Which of the following expressions is correct in case of a CsCl unit cell (edge length, a) ?
(1) $r_c + r_a = a$ (2) $r_c + r_a = \frac{a}{\sqrt{2}}$ (3) $r_c + r_a = \frac{\sqrt{3}a}{2}$ (4) $r_c + r_a = \frac{a}{2}$
72. $\text{H}_2\text{O} + \text{CH}_3\text{COOH} \rightleftharpoons \text{H}_3\text{O}^+ + \text{CH}_3\text{COO}^-$
Which of the following pair act as acids?
(1) H_2O , CH_3COO^- (2) H_2O , H_3O^+ (3) CH_3COOH , H_3O^+ (4) CH_3COOH , CH_3COO^-
73. Which of the following does not exist ?
(1) Mn_2O_7 (2) CuF_2 (3) MnO_3F (4) MnF_7
74. Magnetic nature of C molecule will be:-
(1) Paramagnetic (1.7 BM) (2) Diamagnetic
(3) Paramagnetic (3.8 BM) (4) Paramagnetic (2.8 BM)
75. Correct order is :-
(1) $\text{MgO} < \text{NiO} < \text{K}_2\text{O} < \text{Cs}_2\text{O}$ (basic strength)
(2) $\text{Cs}^+ < \text{K}^+ < \text{Mg}^{2+} < \text{Be}^{2+}$ (ionic mobility in aqueous solution)
(3) $\text{Li}_2\text{CO}_3 < \text{Na}_2\text{CO}_3 < \text{K}_2\text{CO}_3$ (solubility order)
(4) $\text{NH}_3 < \text{PH}_3 < \text{AsH}_3$ (thermal stability)



PART-2 : CHEMISTRY : SECTION-B

76. Which of the following statement is incorrect about $[\text{Fe}(\text{H}_2\text{O})_5 \text{NO}]\text{SO}_4$:-
(1) It produces during brown ring test for nitrates
(2) Oxidation state of Fe is +1
(3) It exhibits geometrical isomerism
(4) Charge on NO is +1
77. A complex of platinum, ammonia and chloride produces four ions per molecule in the solution. The structure consistent with the observation is :-
(1) $[\text{Pt}(\text{NH}_3)_4]\text{Cl}_4$ (2) $[\text{Pt}(\text{NH}_3)_2\text{Cl}_4]$ (3) $[\text{Pt}(\text{NH}_3)_5\text{Cl}]\text{Cl}_3$ (4) $[\text{Pt}(\text{NH}_3)_4\text{Cl}_2]\text{Cl}_2$
78. The compounds A and B in the reaction sequence
$$\text{A} \xleftarrow{\text{Phenol}} \text{CH}_3\text{COCl} \xrightarrow{\text{CH}_3\text{COONa}} \text{B}$$

(1) $\text{CH}_3\text{CO}-\text{O}-\text{COCH}_3$, $\text{C}_6\text{H}_5\text{CH}_2\text{OH}$ (2) $\text{CH}_3\text{CO}-\text{O}-\text{COCH}_3$, $\text{C}_6\text{H}_5\text{OCOCH}_3$
$$\begin{array}{c} \text{CH}_3-\text{C}-\text{O}-\text{C}_6\text{H}_5 \\ || \\ \text{O} \end{array}$$

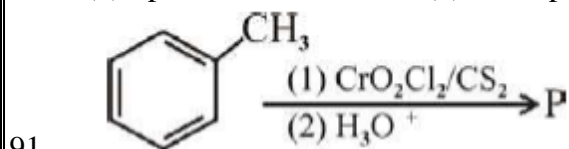
$$\begin{array}{c} \text{CH}_3-\text{C}-\text{O}-\text{C}-\text{CH}_3 \\ || \quad \quad || \\ \text{O} \quad \quad \quad \text{O} \end{array}$$

(3) CH_3COCH_3 , $\text{C}_6\text{H}_5\text{OCOCH}_3$ (4)
79. Incorrect match is :-
(1) Permutit \rightarrow Hydrated silicates of Na and Al (2) Calgon \rightarrow Sodium Hexameta phosphate
(3) $\text{BeH}_2, \text{MgH}_2 \rightarrow$ Covalent polymeric hydride (4) Hydrolith \rightarrow electron deficient hydride
80. At constant temperature and 1 atm pressure, PCl_5 dissociate 2% then at what pressure PCl_5 dissociate 4% :-
(Use $\text{PCl}_5(\text{g}) \rightleftharpoons \text{PCl}_3(\text{g}) + \text{Cl}_2(\text{g})$)
(1) $\frac{1}{8}$ atm (2) $\frac{1}{16}$ atm (3) $\frac{1}{2}$ atm (4) $\frac{1}{4}$ atm
81. Among the following chemical reactions, the one representing homogenous catalysis is :-
(1) $\text{N}_2(\text{g}) + 3\text{H}_2(\text{g}) \xrightarrow{\text{Fe}} 2\text{NH}_3(\text{g})$ (2) $2\text{SO}_2(\text{g}) + \text{O}_2(\text{g}) \xrightarrow{2\text{NO}} 2\text{SO}_3(\text{g}) + 2\text{NO}(\text{g})$
(3) $\text{CO}(\text{g}) + 2\text{H}_2(\text{g}) \xrightarrow{\text{Ni}} \text{CH}_4(\text{g}) + \text{H}_2\text{O}$ (4) $2\text{SO}_2(\text{g}) + \text{O}_2(\text{g}) \xrightarrow{\text{V}_2\text{O}_5} 2\text{SO}_3(\text{g})$
82. How much oxygen is required for complete combustion of 560 g of ethene ($M_w = 28$ g/mol)?
(1) 6.4 kg (2) 1.92 kg (3) 2.8 kg (4) 9.6 kg
83. In following reaction
$$\begin{array}{c} \text{CH}_3 \\ | \\ \text{CH}_3-\text{CH}-\text{CH}=\text{CH} \end{array}, \xrightarrow{\text{HBr}} \text{Products}$$

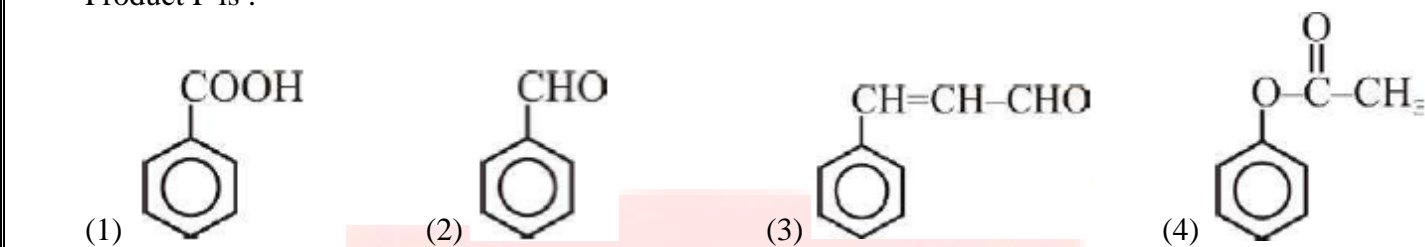
The major product of reaction will be :-



- (1) Spontaneous (2) Non-spontaneous (3) At equilibrium (4) Cant predict



Product P is :-



In isoelectronic species, which of the following is correct :

- (1) $Z_{\text{eff}} \propto (+)$ charge (2) $Z_{\text{eff}} \propto \frac{1}{(-)ve}$ charge (3) Both (1) and (2) are correct (4) None

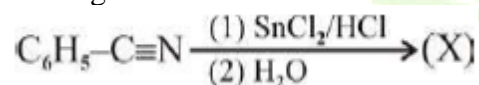
93. Consider the following statements:-

- (a) At high pressure all real gases have $Z > 1$ while at moderate pressure most gases have $Z < 1$
(b) Vanderwaal constant 'a' is measure of attractive force within the gas and is independent of temperature and pressure.
(c) Greater the critical temperature of a gas more easily it will be liquified.
(d) There is no force of attraction between molecules of ideal gas.

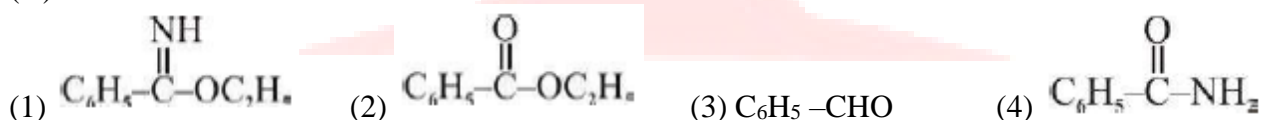
The correct statements are :

- (1) Only b, c, d (2) Only a, c, d (3) Only c, d (4) All a, b, c, d

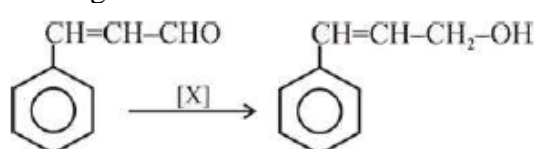
94. In the given reaction



(X) will be :-



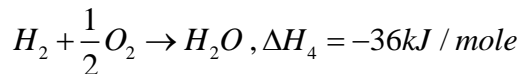
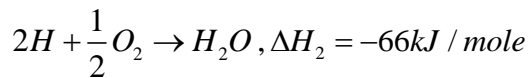
In the given reaction:



'X' will be :

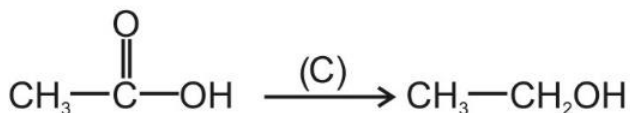
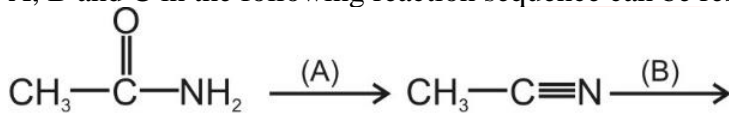
- (1) LiAlH_4 (2) NaBH_4 (3) $\text{H}_2 / \text{Ni}/\Delta$ (4) Both (1) and (2)

96. Given: $\text{H}^+ + \text{OH}^- \rightarrow \text{H}_2\text{O}$, $\Delta H_1 = -56 \text{ kJ / mole}$

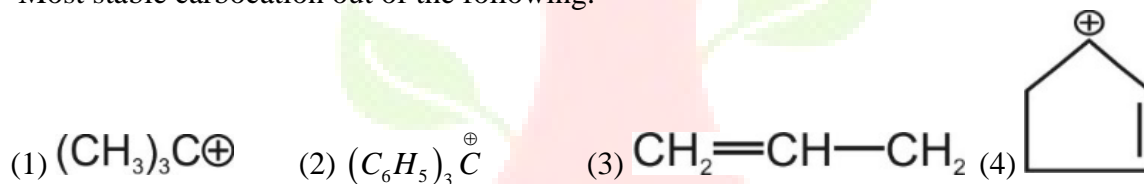


Choosing correct data of $\Delta H_f (H_2O)$, the heat liberated when one gram of water is formed, is

- (1) 36 kJ (2) 2 kJ (3) 18 kJ (4) 1 kJ
97. The degree of dissociation of 0.1 M CH_3COOH in 0.1 M HCl will be ($K_a(CH_3COOH) = 10^{-5}$)
(1) 10^{-3} (2) 10^{-5} (3) 10^{-4} (4) 10^{-6}
98. A, B and C in the following reaction sequence can be respectively



- (1) $LiAlH_4, H_3O^+, P_2O_5$ (2) $P_2O_5, LiAlH_4, H_3O^+$
(3) $H_3O^+, HI / Red P, LiAlH_4$ (4) $P_2O_5, H_3O^+, LiAlH_4$
99. Alkali metals when dissolved in liquid NH_3 at very high concentration gives which of the following coloured solution?
(1) Red (2) Blue (3) Bronze (4) Yellow
100. Most stable carbocation out of the following.

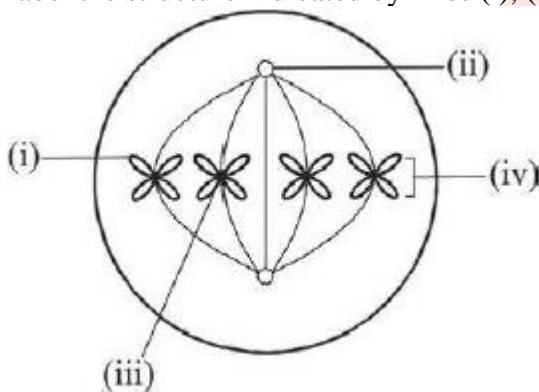


PART-3 : BOTANY : SECTION-A

101. The minimum weight of tomatoes obtained from a plant is 20g. The maximum weights of tomatoes obtained is 120g. What will be the weight of tomatoes obtained by crossing plants with genotype $AAbb \times aabb$ –
(1) 45 g (2) 70 g (3) 100 g (4) 25 g
102. Agranal chloroplasts are found in :-
(1) Mesophyll of pea leaves (2) Bundle sheath of mango leaves
(3) Mesophyll of maize leaves (4) Bundle sheath of sugarcane leaves
103. A pure tall pea plant is crossed with pure dwarf pea plant and their progeny is self pollinated. The ratio of true tall and dwarf plants will be –



- (1) 3 : 1 (2) 1 : 3 (3) 1 : 1 (4) 1 : 0
104. How many statements are incorrect about centrosome ?
(i) Peripheral microtubules are arranged as triplet
(ii) Centrioles are not self duplicating units
(iii) Peripheral microtubules are linked to each other by radial spokes
(iv) Central part does not have any microtubules
(1) One (2) Four (3) Two (4) Three
105. Bouquet stage is observed in :-
(1) Leptotene (2) Zygotene (3) Diplotene (4) Pachytene
106. Most abundant type of configuration of protein is:-
(1) Primary (2) Secondary (3) Tertiary (4) Quaternary
107. Select erroneous pair ?
(1) Eudorina – Anisogamous type of sexual reproduction
(2) Salvinia – Heterophylly and Heterospory
(3) Albugo – Smut fungus
(4) Rhizobium – Biofertilizer
108. FAD is electron acceptor during oxidation of which of the following :-
(1) α -keto glutaric acid \rightarrow succinyl Co-A (2) Succinic acid \rightarrow Fumaric acid
(3) Succinyl CoA \rightarrow Succinic acid (4) Fumaric acid \rightarrow Malic acid
109. When the margins of sepals and petals overlap one another without any particular direction. This condition found in :-
(1) Gulmohar (2) Cotton (3) Mustard (4) China rose
110. How many plants from the followings have corm as underground stem modification Potato, Ginger, Turmeric, Crocus, Colocasia, Onion, Alocasia.
(1) 4 (2) 3 (3) 8 (4) 6
111. A plant has first given far red light and after some time red light is also given to it at night and flowering occurs in it then that plant is :-
(1) SDP (2) LDP (3) Both (4) None
112. Label the structure indicated by lines (i), (ii), (iii) and (iv) :-



- (1) (i) Chromatid, (ii) Centriole, (iii) Centromere (iv) Chromosome
(2) (i) Chromosome, (ii) Centriole, (iii) Centromere, (iv) Chromatid
(3) (i) Chromatid, (ii) Centromere, (iii) Centriole, (iv) Chromosome

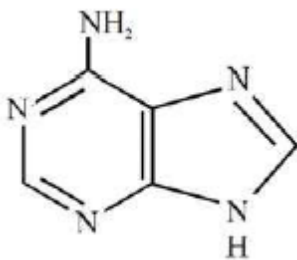


- (4) (i) Chromosome, (ii) Centromere, (iii) Centriole, (iv) Chromatid
113. Soyabean exports the fixed nitrogen as :-
(1) NH_3 (2) NH_4^+ (3) Amino acid (4) Ureides
114. Which of the following is not a feature of C_4 plants ?
(1) They tolerate higher temperatures and they show a response to high light intensities
(2) They lack a process called photorespiration
(3) They have greater productivity of biomass
(4) They show C_2 cycle in mesophyll cells
115. Your uncle is a trained botanist. While walking through a agricultural field. He wanted to show you a leaf modified for storing food. He dug up the plant.
(1) Opuntia (2) Garlic (3) Agave (4) Potato
116. Material of the nucleus is stained by :-
(1) Acidic dye (2) Neutral dye (3) Basic dye (4) Iodine
117. Some stages in the hydrarch are labeled as
A. Marsh meadow stage B. Reed swamp stage
C. Rooted Submerged stage D. Phytoplankton stage E. Forest stage
Identify the choice that represents the correct sequence of these stages.
(1) D,C,B,A,E (2) C,E,A,B,D (3) B,D,C,A,E (4) D,E,C,B,A
118. Floral formula of cruciferae is –
(1) $\text{Br} \frac{\%}{\text{♀}} \text{K}_{(2+2)} \text{C}_{4x} \text{A}_{2+4} \overline{\text{G}}_{(2)}$
(2) $\text{Ebr} \frac{\oplus}{\text{♀}} \text{K}_{2+2} \text{C}_4 \text{A}_{2+4} \overline{\text{G}}_{(2)}$
(3) $\text{Ebr} \frac{\oplus}{\text{♀}} \text{K}_{(2+2)} \text{C}_{4x} \text{A}_{2+4} \underline{\text{G}}_{(1)}$
(4) $\text{Ebr} \frac{\oplus}{\text{♀}} \text{K}_{2+2} \text{C}_{4x} \text{A}_{2+4} \underline{\text{G}}_{(2)}$
119. Among the following neutral amino acids are?
(1) Glycine & Alanine (2) Histidine & Arginine
(3) Glycine & Aspartic acid (4) Glutamic acid & Tyrosine
120. 70 s type of ribosomes are absent in :-
(1) Mitochondria (2) Chloroplast
(3) Bacteria (4) Rough endoplasmic reticulum
121. What is true for Mendel ?
(1) Qualitative study of qualitative characters
(2) Quantitative study of quantitative characters
(3) Qualitative study of quantitative characters
(4) Quantitative study of Qualitative characters
122. If you are asked to classify the various algae into distinct groups, which of the following character you should choose
(1) Nature of stored food material in cell (2) Structure organisation of thallus
(3) Chemical composition of cell wall (4) Pigments present in cell
123. According to five kingdom system of classification Chlamydomonas, Chlorella, Euglena, Amoeba and paramoecium are placed in which kingdom?
(1) Monera (2) Protista (3) Plantae (4) Animalia



meritroot
STRONG ROOTS CREATE MERIT

124. Core of cilium is called as :-
(1) Microtubules (2) Central sheath (3) Axonome (4) Central hub
125. Which of the following tissue provide mechanical support to the growing parts of the plant such as young stem and petiole of a leaf ?
(1) Parenchyma (2) Sclerenchyma (3) Collenchyma (4) Chlorenchyma
126. Consider following statements :-
(A) In caryopsis fruits pericarp is fused with the seed coat and found in wheat and rice.
(B) Litchi is a nut fruit which is indehiscent fruit in which fleshy aril is edible.
Which one of the statements given above is/are correct?
(1) A only (2) B only (3) Both A and B (4) Neither A nor B
127. In Pollen bank, pollen grains are stored at :
(1) 196°C (2) -120°C (3) -196°C (4) 4°C
128. Which of the following is not a correct statement for non-competitive irreversible inhibition of enzymes ?
(1) V is decreased (2) K remains the same
(3) ESI complex is formed
(4) Inhibitor action can be overcome by increasing the substrate concentration
129. The point mutation A to G, C to T, C to G, T to A in DNA are :
(1) Transversion, transition, translocation, frame-shift respectively
(2) Transition, transition, transversion, transversion respectively
(3) Transition only
(4) Transversion only
130. Rate of transpiration is increased by increasing all except :-
(1) Atmospheric humidity (2) Wind velocity (3) Light (4) Temperature
131. A botany student encountered a palm like, short tree with pinnately compound leaves with sessile leaflets bearing mid rib but no lateral veins. Unbranched stem has persistent woody leaf bases. The plant has to be
(1) Cycas (2) Pinus (3) Dryopteris (4) Cedrus
132. How many of the following tissues are secondary in origin ? Intra fascicular cambium, Inter fascicular cambium, Cork cambium, Marginal meristem, Root apical meristem.
(1) One (2) Two (3) Three (4) Four
133. During translation peptide bond is formed between :-
(1) P site amino acid -NH₂ and A site amino acid -COOH
(2) A site amino acid -COOH and P site amino acid -NH₂
(3) P site amino acid -COOH and A site amino acid -COOH
(4) P site amino acid -COOH and A site amino acid -NH₂
134. The following structure is related to which compound ?

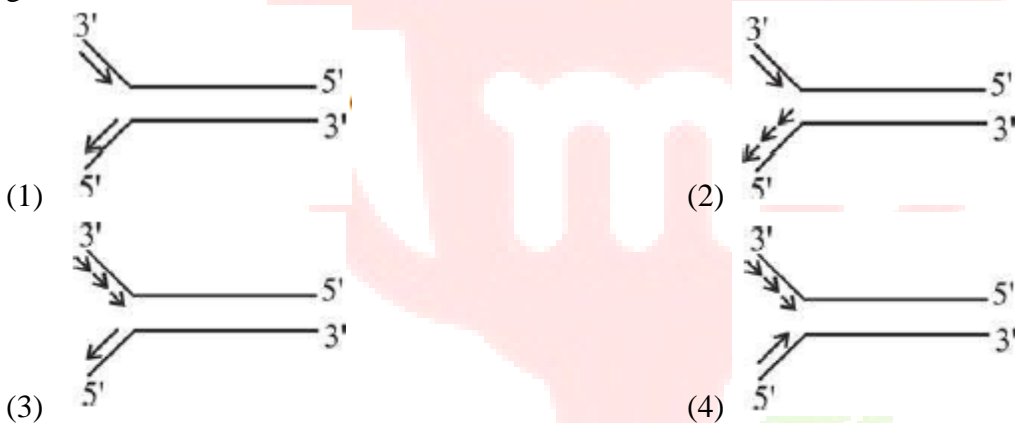




- (1) Cytosine (2) Adenine (3) Uracil (4) Thymine
135. Which of the following taxonomic aid is useful only in case of plants ?
(1) Museum (2) Key (3) Herbarium (4) Zoological park

PART-3 : BOTANY : SECTION-B

136. List of some of the secondary permanent tissue is given below :-
(A) Alburnum (B) Duramen (C) Phelloderm
(D) Phellem (E) Secondary xylem
How many of them are the product of phellogen?
(1) Three (2) Four (3) Two (4) One
137. Which of the following figure accurately describes the replication process if polarity of template strand is given ?



- (1) (2) (3) (4)
138. Virus free plants can be develop from :
(1) Embryo Culture (2) Meristem culture (3) Anther Culture (4) Root Culture
139. Which bryophytes is used as fuel and packing material ?
(1) Funaria (2) Gelidium (3) Gracilaria (4) Sphagnum
140. Sexual reproduction oogamous type and accompanied by complex post fertilization :-
(1) Chlorophyceae (2) Phaeophyceae (3) Cyanophyceae (4) Rhodophyceae
141. What is common between bryophytes and pteridophytes ?
(1) Both have vascular tissue (2) Both have seeds
(3) Their gametophyte is free-living (4) Their sporophyte is dependent
142. Transverse section of stem of Cucurbita can be identified from the transverse section of Maize stem by the presence of-
(1) Absence of cambium in the vascular bundles (2) Conjoint, collateral and open vascular bundle
(3) Scattered vascular bundles (4) Conjoint, bicollateral and open vascular bundles
143. Which phase corresponds to the interval between the mitosis and initiation of DNA replication ?
(1) S phase (2) M phase (3) G₁ phase (4) G₂ phase
144. Which type of regeneration in found in planaria?
(1) Morphallaxis (2) Epimorphosis (3) Compensatory (4) Both 1 & 2
145. Formation of embryo directly from egg without fertilization is known as :
(1) Parthenocary (2) Apogamy (3) Apospory (4) Parthenogenesis



146. Select incorrect matching w.r.t. aestivation considering all columns

Column-I

Column-II

Column-III

1) Valvate



Calotropis

2) Twisted



Lady's finger

3) Imbricate



China rose

4) Vexillary



Pea

147. Which of the following is incorrectly matched?

- 1) Dedifferentiated – Interfascicular cambium medullary cells
- 2) Heart wood – Highly lignified walls and non-conductive
- 3) Vascular – Partly primary in origin cambium in dicot root
- 4) Lenticels – Lens shaped openings for gaseous exchange

148. Acid hydrolases enzymes are found in

- 1) RER
- 2) Golgi apparatus
- 3) Lysosomes
- 4) SER

149. If meiocyte has 24 chromosomes with 10 pg DNA then what will be the total number of bivalents, chromatids number in prophase-I and amount of DNA in meiosis-I products?

Bivalents	Chromatids	DNA(pg)
1) 12	48	10
2) 12	24	5
3) 6	24	10
4) 12	24	20

150. In a plasmolysed cell

- 1) TP is very high
- 2) DPD= 0
- 3) Cell membrane burst due to swelling of cell
- 4) Pressure potential is negative





PART-4 : ZOOLOGY : SECTION-A

151. "Infected cell can survive while viruses are being replicated and released". In case of HIV infection given statement is true for which cell ?

- (1) Macrophage (2) T-helper (3) T-killer (4) B-lymphocyte

152. Which of the following are correct matching pairs:

	Species 1	Species 2		Name of the Interaction
(i)	-	0	(A)	Mutualism
(ii)	+	-	(B)	Competition
(iii)	+	0	(C)	Parasitism
(iv)	+	+	(D)	Commensalism
(v)	-	-	(E)	Ammensalism

- (1) A-iii, B-v, C-i, D-iv, E-ii (2) A-iii, B-v, C-i, D-ii, E-iv
(3) A-iv, B-v, C-ii, D-i, E-iii (4) A-iv, B-v, C-ii, D-iii, E-i

153. Noise level consider as pollution above :-

- (1) 95 dB (2) 80 dB (3) 65 dB (4) 45 dB

154. Primary function of myelin sheath around vertebrate axon is to :-

- (1) regulate $\text{Na}^+ - \text{K}^+$ pump
(2) deactivate the release of neurotransmitter
(3) increase in value of action potential
(4) Increase in speed of conduction by preventing leakage of ions

155. Primary lymphoid organ is -

- (1) Bone marrow (2) Spleen (3) Tonsils (4) MALT

156. Intestinal perforation and death may occur in severe cases of which disease ?

- (1) Pneumonia (2) Typhoid (3) Filariasis (4) Malaria

157. The term "Bio-magnification" refers to the

- (1) Growth of organism due to food consumption
(2) Increase in population size
(3) Blowing up of environmental issues by man
(4) Increase in the concentration of nondegradable pollutants through food chain

158. The four sketches (A, B, C and D) given below represent four different types of animal tissues. Which one of these is correctly identified in the options given along with its correct location and function?



(A)



(B)



(C)



(D)

Tissue

Location

Function

(1) (A)	Simple squamous epithelium	Trachea	Diffusion Boundary
(2) (B)	Unicellular gland	Alimentary canal	Secretion
(3) (C)	Bone	In larynx	Support
(4) (D)	Compound epithelium	Skin	Protection

159. Which of the following part of nephron found in medulla of kidney?
 (1) Proximal Convoluted tubules (2) Malpighian tubules
 (3) Loop of Henle (4) Distal convoluted tubules
160. Which of the following statements is wrong ?
 (1) Intercellular material of cartilage is solid
 (2) The bone cells are present in the lacunae
 (3) Communication junctions are present in cardiac muscles
 (4) Bone has pliable ground substance
161. MOET (Multiple Ovulation Embryo Transfer) is method of :
 (1) Fish cultivation (2) Hybridisation of cattle (3) Birth control (4) Cloning of sheep
162. Which of the following structures are not include in external genitalia of female ?
 (a) Mons pubis (b) Labia majora (c) Hymen (d) Clitoris
 (e) Cervix (f) Fallopian tube
 (1) c, e, f (2) Only e, f (3) Only d, f (4) a, d, e, f
163. Which one of the following is the correct matching of the events occurring during menstruation cycle?
 (1) Menstruation : Breakdown of myometrium
 (2) Proliferative phase : Estrogen gradually decrease
 (3) Ovulation : Only Due to FSH surge
 (4) Secretory phase : Development of corpus luteum
164. An ecosystem recieves 1,000,000 joule of incident-solar energy, then what is the energy available for primary producer level ?
 (1) 10,000 Joule (2) 1,00,000 Joule (3) 1000 Joule (4) 100 Joule
165. Which of the following contraceptive devices makes the uterus unsuitable for implantation and the cervix hostile to the sperms ?
 (1) Nim – 76 (2) LNG – 20 (3) Lippes loop (4) Multiload – 375
166. How many structures in the list given below have $(22 + x)$ chromosome ?



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- Polar Body, Oogonia, Primary Oocyte, Ovum, Secondary oocyte
(1) Four (2) Three (3) Two (4) One
167. Glucose is absorbed through :-
(1) active transport (2) simple diffusion (3) facilitated diffusion (4) all of the above
168. Which period is also called as 'Golden age of dinosaur':-
(1) Triassic (2) Cretaceous (3) Jurassic (4) None
169. Which phylum has cell-aggregate type of body plan?
(1) Platyhelminthes (2) Aschelminthes (3) Porifera (4) Protozoa
170. Global agreement in specific control strategies to reduce the release of ozone depleting substances was adopted by :-
(1) Rio de Janeiro Conference (2) The Montreal Protocol
(3) The Koyoto Protocol (4) The Vienna convention
171. Amount of energy stored in plant tissues after metabolic loss, is called as :-
(1) Gross primary productivity (2) Net primary productivity
(3) Net community productivity (4) Secondary productivity
172. Which one of the following pair is mismatched?
(1) Bombyx mori – Silk (2) Pila globosa – Pearl
(3) Apis indica – Honey (4) Tacardia lacca – Lac
173. If for some reason, the vasa efferentia in the human reproductive system get blocked, the gametes will not be transported from :-
(1) Testes to epididymis (2) Epididymis to Vasdeferens
(3) Ovary to uterus (4) Vagina to uterus
174. Volume of air a person can inspire or expire per minute is
(1) 2500–3000 ml (2) 1000–1100 ml (3) 6000–8000 ml (4) 1100 – 1200 ml
175. All mammals (except a few) have _____ cervical vertebrae.
(1) 7 (2) 8 (3) 9 (4) 10
176. The classical example of adaptive radiation is :
(1) Darwin's finches (2) Marsupials of Australia (3) Both (1) and (2) (4) None
177. Thin filament of myofibrils contains 2'F' actins and two other proteins namely _____ and _____.
(1) myosin, troponin (2) Troponin, tropomyosin
(3) myosin, tropomyosin (4) actinin, tropomyosin
178. Each trophic level has a certain mass of living organic material at a particular time, called as :-
(1) Standing crop (2) Standing state (3) Biotic potential (4) All of the above
179. A small pit on the retina of the eye which contains only cones is called :-
(1) Area centralis (2) Fovea centralis (3) Blind spot (4) Ora serrate
180. Except which in all connective tissue cells secrete fibres of structural proteins ?
(1) Cartilage (2) Bone (3) Blood (4) Tendon
181. Which pair is matched correctly?



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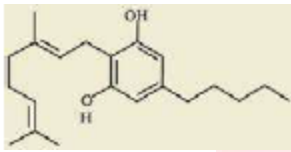
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(1) Flowering branch of Datura



(2) Chemical structure of morphine



(3) Leaves of Cannabis sativa



(4) Opium poppy

182. Which of the following statement incorrect about parturition in human?

- (1) Signals for parturition originate from fully develop foetus and placenta
- (2) It is a complex neuroendocrine mechanism.
- (3) Oxytocin induces myometrium contraction
- (4) Decrease in estrogen and progesterone ratio

183. Major conduit for energy flow in tropical rain forest, is :-

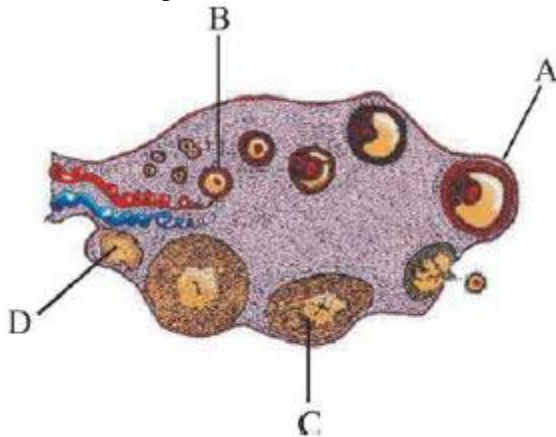
- (1) Parasitic food chain
- (2) Detritus food chain
- (3) Grazing food chain
- (4) All of the above

184. Steroid hormones binds with _____ receptors and promotes _____ synthesis where protein hormones binds with _____ receptors.:-

- (1) Cytoplasmic , carbohydrate, intranuclear
- (2) Intranuclear, Protein, Cytoplasmic
- (3) Intranuclear, protein, cell membrane
- (4) Cell membrane, Carbohydrate, intranuclear



185. The figure below shows development of follicles (A, B, C, D). Select the option giving correct identification together with its function ?



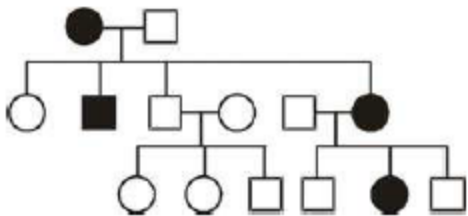
- (1) B–Secondary Follicle–secrete progesterone (2) D – Corpus luteum – Secrete estrogen
(3) A – Tertiary follicle – Secrete FSH & LH (4) C – Corpus luteum – Secrete progesterone

PART-4 : ZOOLOGY : SECTION-B

186. Maltase, dipeptidase and lipase are found in :-

- (1) Pancreatic juice (2) Gastric juice (3) Succus entericus (4) Bile

187. Given below is the pedigree of an autosomal dominant disorder-Myotonic dystrophy.



In this pedigree the genotype of all affected children will be –

- (1) AA (2) Aa (3) AA or Aa (4) aa

188. Expansion of Distributional range of inferior species due to removal of superior species, is called as :-

- (1) Competitive exclusion (2) Competitive release (3) Resource partitioning (4) Interference competition

189. Gills in apple snail are found :-

- (1) On shell (2) in foot (3) in mantle cavity (4) in visceral hump

190. The test tube baby programme employs which one of the following techniques?

- (1) G I F T (2) I U T (3) A I (4) I U I

191. Find out the correctly matched :-



	Hormone	Source	Function
(1)	Oxytocin	Hypothalamic nuclei	Vigorous contraction in uterine muscles
(2)	Melatonin	Pineal gland	Effect on Metabolism and dark pigmentation
(3)	Calcitonine	Thyroid follicle	↓Ca ⁺² level in blood
(4)	Aldosterone	Zona Glomerulosa	Spermatogenesis

192. Arrangement of ear ossicles, starting from ear drum is :-
(1) Stapes, malleus, incus (2) Malleus, incus, stapes (3) Incus, stapes, malleus (4) Stapes, incus, malleus
193. Which of the following set represents convergent evolution :
(1) Wings of sparrow and wings of bat (2) Hind limb of rat and human
(3) Potato and sweet potato (4) Blood proteins of man and apes
194. Darwin gave the theory of evolution was based on:
(1) Inheritance of acquired characters (2) Natural selection
(3) Mutation (4) Abiogenetic origin of life
195. Which of the following statement is correct ?
(1) 55 percent of blood plasma is water and proteins contribute 6-8 percent of it
(2) Eosinophils (60-65%) resist infections and are also associated with allergic reactions
(3) Platelets also called thrombocytes, are cell fragments produced from megakaryocytes.
(4) RBC's have an average life span of 4 to 5 days
196. Intercalated discs are types of
1) Adhering junction 2) Anchoring junction 3) Communication junction 4) Tight junction
197. Which of the following is not a second messenger?
1) Adenylate cyclase 2) Cyclic adenosine monophosphate
3) Calcium ions 4) c-GMP
198. Good ozone and bad ozone are present respectively in
1) Mesosphere and stratosphere 2) Exosphere and stratosphere
3) Stratosphere and troposphere 4) Stratosphere and mesosphere
199. From original seed-eating finches, many other forms with altered beaks arose, enabling them to become insectivorous and vegetarian finches. This process of evolution of different species starting from a point is
1) Parallel evolution 2) Adaptive radiation 3) Convergent evolution 4) Natural selection





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200. To induce follicular maturation and superovulation in successful production of hybrids, which of the following hormone analogues would be administered to a cow?

- 1) Progesterone 2) Estrogen 3) FSH 4) hCG



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