Free Mock
Test 05 - NEET

(Target: NEET 2024)

मोशन है, तो भरोसा है

Physics - Section A

Section A Shall Consist Of 35 (Thirty-five) Questions In Each Subject .All Questions Are Compulsory.

1. The power rating of an electric motor which draws a current of 3.75 amperes when operated at 200 V is about

(1) 1 H. P. (2) 500 W

(3) 54 W (4) 750 H. P.

2. Planck's constant (h), speed of light in vacuum (c) and Newton's gravitational constant (G) are three fundamental constant, which of the following combinations of these has the dimension of length?

Given : $G = [M^{-1}L^3T^{-2}]$, $h = [ML^2T^{-1}]$ & $c = [LT^{-1}]$

(1) $\sqrt{\frac{Gc}{h^{3/2}}}$ (2) $\frac{\sqrt{hG}}{c^{3/2}}$

(3) $\frac{\sqrt{hG}}{c^{5/2}}$ (4) $\sqrt{\frac{hc}{G}}$

3. A small body of mass 0.10 kg is executing SHM of amplitude 1.0 m and period 0.20 sec. The maximum force acting on it is

(1) 98.596 N (2) 985.96 N

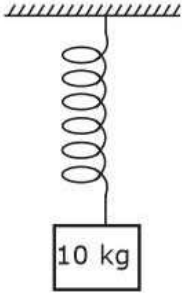
(3) 146.98 N (4) 76.23 N

4. A 2m long rod of radius 1 cm which is fixed from one end is given a twist of 0.8 radians. The shear strain developed will be

(1) 0.002 (2) 0.004

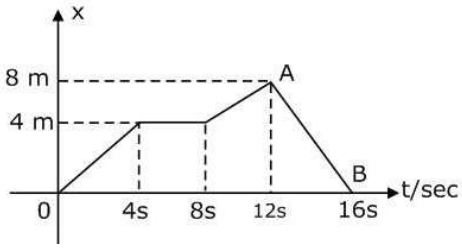
(3) 0.008 (4) 0.016

5. Force constant of a spring is 100 N/m. If a 10 kg block attached with the spring is at rest, then find extension in the spring ($g = 10$ m/s^2)



(1) 2 m (2) 1 m (3) 0.1 m (4) 0.2 m

6. For given x-t graph, Find the instantaneous speed of particle at t = 10s (in m/s)



(1) 1 m/s (2) 8 m/s

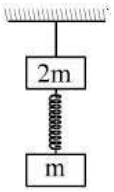
(3) 4 m/s (4) 6 m/s

7. Charge is uniformly distributed in a space. The net flux passing through the surface of an imaginary cube of side a in the space is ϕ. The net flux passing through the surface of an imaginary sphere of radius a in the space will be

(1) ϕ (2) $\frac{3}{4\pi}\phi$

(3) $\frac{2\pi}{3}\phi$ (4) $\frac{4\pi}{3}\phi$

8. Two blocks are connected by a spring. The combination is suspended, at rest, from a string attatched to the ceiling, as shown in the figure. The string breaks suddenly. Immediately after the string breaks, what is the initial downward acceleration of the upper block of mass 2m ?



(1) 0 (2) 3g/2 (3) g (4) 2g

9. A string is cut into three parts, having fundamental frequencies n_1, n_2 and n_3 respectively. Then original fundamental frequency 'n' related by the expression as:-

(1) $\frac{1}{n} = \frac{1}{n_1} + \frac{1}{n_2} + \frac{1}{n_3}$

(2) $n = n_1 \times n_2 \times n_3$

(3) $n = n_1 + n_2 + n_3$

(4) $n = \frac{n_1+n_2+n_3}{3}$

10. Which of the following statements related to stress-strain relation is correct ?

(1) Stress is linearly proportional to strain irrespective of the magnitude of the strain.
(2) Stress is linearly proportional to strain above the yield point.
(3) Stress is linearly proportional to strain till proportionality point
(4) Stress-strain curve is same for all materials.

11. The kinetic energy K of a particle moving along a circle of radius R depends upon the distance S as $K = \beta S^2$, where β is a constant. Tangential acceleration of the particle is proportional to

(1) S (2) $S\sqrt{s}$
(3) $\sqrt{S}$ (4) $\frac{1}{\sqrt{S}}$

12. Two charges, each equal to q, are kept at x = − a and x = a on the x-axis. A particle of mass m and charge $q_0 = \frac{q}{2}$ is placed at the origin. If charges q_0 is given a small displacement y(y<<a) along the y-axis, the net force acting on the particle is proportional to

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

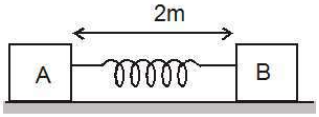
13. The radius of gyration of a uniform rod of length l , about an axis passing through a point $\frac{l}{4}$ away from the centre of the rod, and perpendicular to it, is:

(1) $\frac{1}{8}l$ (2) $\frac{1}{4}l$
(3) $\sqrt{\frac{7}{48}}l$ (4) $\sqrt{\frac{3}{8}}l$

14. The relation between Young's modulus Y, bulk modulus K and modulus of elasticity σ is

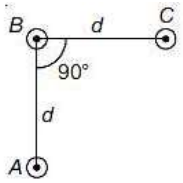
(1) $\frac{1}{y} = \frac{1}{k} + \frac{3}{\eta}$ (2) $\frac{3}{y} = \frac{1}{\eta} + \frac{1}{3k}$
(3) $\frac{1}{y} = \frac{3}{\eta} + \frac{1}{3k}$ (4) None of these.

15. Two blocks are connected by a spring of natural length 2 m. The force constant of spring is 200 N/m. Find spring force in following situations. If block 'A' and 'B' both are displaced by 0.5 m in opposite direction.



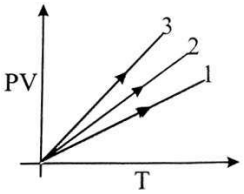
(1) 200 N (2) 100 N
(3) 400 N (4) Zero

16. An arrangement of three parallel straight wires placed perpendicular to plane of paper carrying same current 'I' along the same direction is shown in Fig. Magnitude of force per unit length on the middle wire 'B' is given by



(1) $\frac{\mu_0 I^2}{2\pi d}$ (2) $\frac{2\mu_0 I^2}{\pi d}$
(3) $\frac{\sqrt{2}\mu_0 I^2}{\pi d}$ (4) $\frac{\mu_0 I^2}{\sqrt{2}\pi d}$

17. PV versus T graph of equal masses of H_2, He and CO_2 is shown in figure. Choose the correct alternative

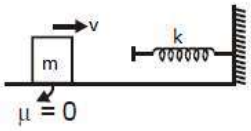


(1) 3 corresponds to H_2, 2 to He and 1 to CO_2
(2) 1 corresponds to He, 2 to H_2 and 3 to CO_2
(3) 1 corresponds to He, 3 to H_2 and 2 to CO_2
(4) 1 corresponds to CO_2, 2 to H_2 and 3 to He

18. The value of g on the surface of earth is 9.8 m/s^2 and the radius of earth is 6400km. The average density of earth in kg/m^3 will be -

(1) 5.29×10^3 (2) 2.64×10^3
(3) 7.60×10^3 (4) 1.46×10^3

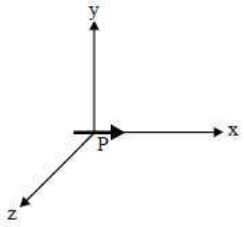
19. A block of mass m is moving on smooth horizontal surface. A spring of spring constant k is arranged as shown. Then maximum force applied by spring is proportional to



(1) v^2 (2) v^3

(3) v^4 (4) v

20. A short electric dipole is oriented along the x-direction at the origin. Which of the following point the electric field has no x component.



(1) $(1,1,0)$ (2) $\left(\sqrt{2},1,0\right)$

(3) $\left(1,\sqrt{2},0\right)$ (4) $(1,0,0)$

21. If the kinetic energy of a satellite orbiting around the earth is doubled then -

(1) the satellite will escape into the space.

(2) the satellite will fall down on the earth

(3) radius of its orbit will be doubled

(4) radius of its orbit will become half.

22. A 0.1 kg steel ball falls from a height of 10m and bounces to a height of 7m. If the dissipated energy goes to the ball, the rise in its temperature will be -(Specific heat of steel = 0.11 k Cal/kg K)

(1) 1.0ºC (2) 0.064ºC

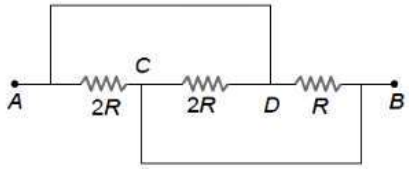
(3) 0.72ºC (4) 0

23. A boy of mass 50 kg jumps to a height of 0.8 m from the ground then momentum transferred by the ground to boy is

(1) 400 kg m/s (2) 200 kg m/s

(3) 800 kg m/s (4) 500 kg m/s

24. What is the equivalent resistance between A and B



(1) $\frac{2}{3}$R (2) $\frac{3}{2}$R

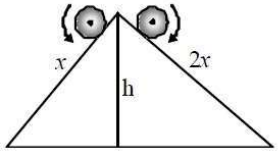
(3) $\frac{R}{2}$ (4) 2R

25. 1 cm^3 of water at its boiling point absorbs 540 calories of heat to become steam with a volume of 1671 cm^3. If the atmospheric pressure $= 1.013 \times 10^5\ N/m^2$ and the mechanical equivalent of heat $= 4.19\ J/$ calorie, the energy spent in this process in overcoming intermolecular forces is

(1) 540 cal (2) 40 cal

(3) 500 cal (4) Zero

26. Two identical discs slip from top of two identical planes of slant length x and 2x but height h is same as shown in figure. The velocities v_1 and v_2 acquired by the discs, when they reach the bottom of the incline; are related as -



(1) $v_1 = v_2$ (2) $v_1 = 2v_2$

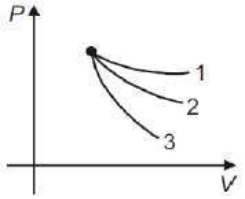
(3) $2v_1 = v_2$ (4) None of these

27. A gas is suddenly expanded such that its final volume becomes 3 times its initial volume. If the specific heat at constant volume of the gas is 2R, then the ratio of initial to final pressure is nearly equal to :

(1) 5 (2) 6.5

(3) 7 (4) 3.5

28. P-V plots for three gases He, N_2 and SO_2 during adiabatic process are shown in the figure. Plots 1, 2 and 3 should correspond respectively to



(1) He, N_2, SO_2 (2) He, SO_2, N_2

(3) SO_2, N_2, He (4) SO_2, He, N_2

29. Consider a diatomic gas enclosed in a cylinder with a movable piston. The piston is massless, and the pressure outside is atmospheric pressure. If the cylinder is kept on a heat reservoir of constant temperature T and the piston is pulled out slowly so that the temperature of the gas inside remains constant, then

	List–I		List–II
I	Remains constant	P	The force required to pull out the piston
II	Increases	Q	The average change in momentum of molecules colliding with the piston
III	Decreases	R	The number of collision of molecules per unit time with the walls
IV	Cannot be predicted with data given	S	Molar mass of the gas
		T	The pressure of the gas
		U	The average distance between molecules

(1) $I \rightarrow Q; II \rightarrow R, U; III \rightarrow S, T; IV \rightarrow P, U$

(2) $I \rightarrow P, U; II \rightarrow P, U; III \rightarrow R, S, T; IV \rightarrow S$

(3) $I \rightarrow Q, S; II \rightarrow P, U; III \rightarrow R, T; IV \rightarrow S$

(4) $I \rightarrow Q, S; II \rightarrow R, U; III \rightarrow P, T, U; IV \rightarrow S$

30. Where should an object be placed infront of a concave mirror of focal length 20 cm so that image is 2 times of the size of object :

(1) 10 cm

(2) 30 cm

(3) both (A) & (B)

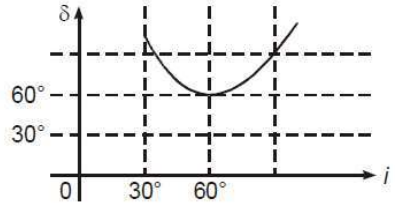
(4) 40 cm

31. The refractive index of water and glass with respect to air are 1.3 and 1.5 respectively. What will be the refractive index of glass with respect to water-

(1) $\frac{15}{13}$ (2) $\frac{13}{15}$

(3) 2 (4) 3

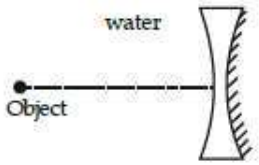
32. A light ray is incident at angle of incidence i on an isosceles prism, and deviation δ is measured. When i versus δ graph is plotted, it is found as shown below. The value of refractive index of the prism material is



(1) 1 .5 (2) $\sqrt{2}$

(3) $\sqrt{3}$ (4) $\frac{5}{3}$

33. A concave lens of radius of curvature 15 cm and $\mu = 1.5$ is placed in water $\left(\mu = \frac{4}{3}\right)$. If one surface is silvered, then image distance from lens when an object is placed at distance of 14 cm from the lens is



(1) 8.5 cm (2) 4.2 cm

(3) 10.5 cm (4) 6.4 cm

34. If we need a magnification of 375 from a compound microscope of tube length 150 mm and an objective of focal length 5 mm, the focal length of the eye-piece, should be close to:

(1) 22 mm (2) 12 mm

(3) 2 mm (4) 33 mm

Physics - Section B

Section B Shall Consist Of 15 (Fifteen) Questions In Each Subject. Candidate Needs To Attempt Any 10 (Ten) Questions Out Of 15 (Fifteen) In Each Subject.

36. In the equation $\left(P + \frac{a}{V^2}\right)(V - b)$ = constant, the unit of a is ?

(1) dyne cm^5 (2) dyne cm^4

(3) dyne cm^{-3} (4) dyne cm^{-2}

37. Which of the following is a vector quantity :-

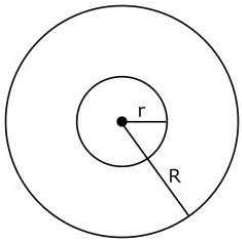
(1) Gravitational potential

(2) Electric current

(3) Speed

(4) Gravitational field intensity

38. A charge Q is distributed over two concentric conducting thin spherical shells radii r and R (R > r). If the surface charge densities on the two shells are equal, the electric potential at the common centre is:



(1) $\frac{1}{4\pi\varepsilon_0}\frac{(2R+r)}{(R^2+r^2)}Q$

(2) $\frac{1}{4\pi\varepsilon_0}\frac{(R+r)}{(R^2+r^2)}Q$

(3) $\frac{1}{4\pi\varepsilon_0}\frac{(R+r)}{2(R^2+r^2)}Q$

(4) $\frac{1}{4\pi\varepsilon_0}\frac{(R+2r)Q}{2(R^2+r^2)}$

39. 110 volts (rms) is applied across a series circuit having resistance 11 Ω and impedance 22 Ω. The power consumed is

(1) 366 W (2) 550 W

(3) 1100 W (4) 275 W

40. A magnetic material of volume 30 cm^3 is placed in a magnetic field of intensity 5×10^4 A/m. The magnetic moment produced due to it is $6amp - m^2$. The value of net magnetic field inside the material will be -

(1) 0.314 Tesla (2) 3.14 Tesla

(3) 0.0314 Tesla (4) 3.14×10^4 Tesla

41. An inductance stores energy in-

(1) electric field (2) magnetic field

(3) resistance of coils (4) all of the above

42. The terminal potential difference of a cell, when cell is short circuited –
(E = E.M.F. of the cell)

(1) E (2) E/2

(3) zero (4) E/3

43. The resonant frequency of a circuit is f. If the capacitance is made 4 times the initial values, then the resonant frequency will become

(1) f / 2 (2) 2f

(3) f (4) f / 4

44. In an ac circuit, the emf E and current I varies with time t as $E = 220 \sin(100\pi t)$, $I = \cos(100\pi t)$. The average power in the circuit is given by

(1) $\frac{220}{\sqrt{2}}$ (2) 110

(3) $220\sqrt{2}$ (4) Zero

45. If Young's double slit experiment is performed in water

(1) The fringe width will decrease

(2) The fringe width will increase

(3) The fringe width will remain unchanged

(4) There will be no fringe

46. X(n, α) ^7_3Li , then X will be-

(1) $^{10}_5B$ (2) ^9_5B (3) $^{11}_4Be$ (4) ^4_2He

47. Zener breakdown occurs in a p-n junction having p and n both :

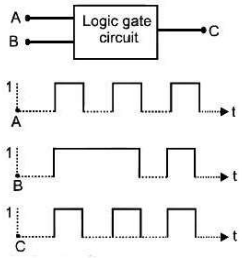
(1) lightly doped and have wide depletion layer.

(2) heavily doped and have narrow depletion layer.

(3) heavily doped and have wide depletion layer.

(4) lightly doped and have narrow depletion layer.

48. The following figure shows a logic gate circuit with two inputs A and B and the output C. The voltage wave forms of C are as shown below :

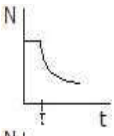


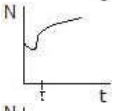
The logic circuit gate is

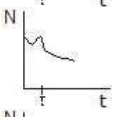
(1) AND gate (2) NAND gate

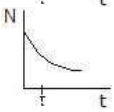
(3) NOR gate (4) OR gate

49. A radioactive sample consists of two distinct species having equal number of atoms initially. The mean life time of one species is τ and that of the other is 5τ. The decay product in both cases are stable. A plot is made of the total number of radioactive nuclei as a function of time. Which of the following figures best represents the form of this plot ?

(1) 

(2) 

(3) 

(4) 

50. A particle of mass M at rest decays into two particles of masses m_1 and m_2, having non-zero velocities. The ratio of the de-Broglie wavelengths of the particles, λ_1/λ_2 is

(1) m_1/m_2 (2) m_2/m_1

(3) 1.1 (4) $\sqrt{m_2}/\sqrt{m_1}$

Chemistry - Section A

Section A Shall Consist Of 35 (Thirty-five) Questions In Each Subject .All Questions Are Compulsory.

51. The freezing point of equimolal aqueous solution will be highest for-

(1) $C_6H_5NH_3Cl$ (2) $Ca(NO_3)_2$

(3) $La(NO_3)_3$ (4) $C_6H_{12}O_6$ (Glucose)

52. Which of the following is the correct order of second ionisation potential?

(1) Be < Li < B < C

(2) Mg < Al < Si < Na

(3) C < N < F < O

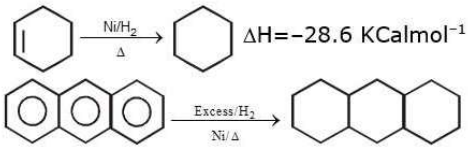
(4) Si < P < S < Cl

53. In polymer Buna-S ; 'S' stands for-

(1) Styrene (2) Sulphur

(3) Strength (4) Sulphonation

54. Use the following data and calculate the resonance energy of anthracene :



$\Delta H = -116.2$ KCal mol^{-1}

(1) 84 Kcal/mol (2) 100 Kcal/mol

(3) 110 Kcal/mol (4) 116 Kcal/mol

55. How many mili moles of sucrose should be dissolved in 500 gms of water so as to get a solution which has a difference of 104°C between boiling point and freezing point? (K_f = 1.86 K Kg mol^{-1}, K_b = 0.52 K Kg mol^{-1})

(1) 500 mmoles (2) 900 mmoles

(3) 840 mmoles (4) 650 mmoles

56. Which order is incorrect for the given property?

(1) C < N < F < O (2^{nd} ionisation energy)

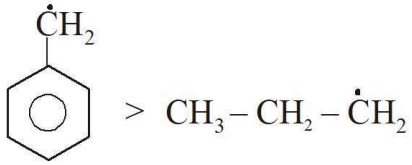
(2) Ga < Al < In < Tl (atomic size)

(3) Li < K < Na < Rb (density)

(4) I < Br < Cl < F (Electron affinity)

57. Select the incorrect options-

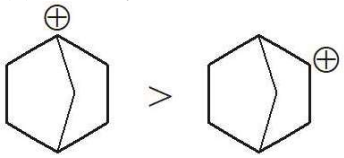
(1) Stability of free radical



(2) Stability of carbanion

$HC \equiv \bar{C} \;>\; CH_2 = \bar{C}H \;>\; CH_3 - \bar{C}H_2$

(3) Stability order of carbocation



(4) Stability of resonanting structures

58. Which of the following is not buffer?

(1) NH_4OH + C_6H_5COOH

(2) $HCOOH + HCOONa$

(3) $H_2CO_3 + HCOOK$

(4) $NH_4OH + NH_4Cl$

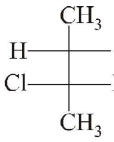
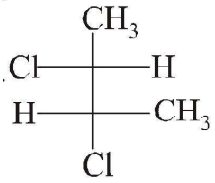
59. For BF_3 molecule which of the following is true?

(1) B-atom is sp^2 hybridised

(2) There is a $P\pi - P\pi$ back bonding in this molecule

(3) Observed B–F bond length is found to be less than the expected bond length

(4) All of these

60. If specific rotation of  is + 36°, what will be the specific rotation of  will be?

(1) +36°

(2) –36°

(3) 0°

(4) +18°

61. Value of λ_m° will be highest for-

(1) $CrCl_3 \cdot 4NH_3$

(2) $CrCl_3 \cdot 5NH_3$

(3) $CrCl_3 \cdot 6NH_3$

(4) $CrCl_3 \cdot 3NH_3$

62. Which of the following does not exist?

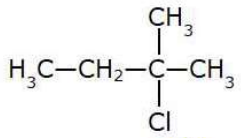
(1) H_3O^+

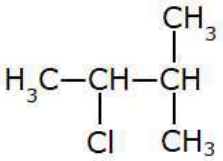
(2) NH_4^+

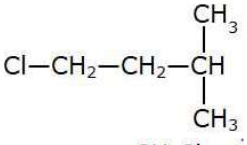
(3) H_4O^{2+}

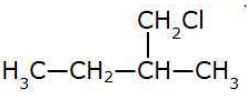
(4) All

63. An alkene "A" on reaction with O_3 and $Zn - H_2O$ gives propanone and ethanal in equimolar ratio. Addition of HCl to alkene "A" gives "B" as the major product. The structure of product "B" is-

(1) 

(2) 

(3) 

(4) 

64. For following reactions,

$A \xrightarrow{700\ K} Product$

$A \xrightarrow[catalyst]{500K} Product$

it was found that the activation energy is decreased by 30 kJ/mol in the presence of catalyst. If assume that the rate remains unchanged, the activation energy for catalysed reaction is (Assume pre exponential factor is same)

(1) 75 kJ/mol (2) 135 kJ/mol

(3) 198 kJ/mol (4) 105 kJ/mol

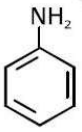
65. The type of isomerism shown by the complex $[CoCl_2(en)_2]$ is-

(1) Ionization isomerism (2) Geometrical isomerism

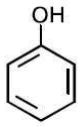
(3) Coordination isomerism (4) Linkage isomerism

66. Which of the following compounds will form significant amount of meta product during mononitration reaction?

(1) 

(2) 

(3) 

(4) 

67. Monoclinic crystal has dimension-

(1) $a \neq b \neq c$, $\alpha = \gamma = 90° \neq \beta$

(2) $a = b = c$, $\alpha = \beta$, $\gamma = 90°$

(3) $a = b \neq c$, $\alpha = \beta = \gamma = 90°$

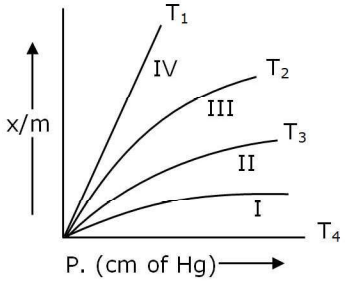
(4) $a \neq b \neq c$, $\alpha \neq \beta \neq \gamma \neq 90°$

68. The metal that can be purified economically by fractional distillation method is-

(1) Ni (2) Cu

(3) Zn (4) Fe

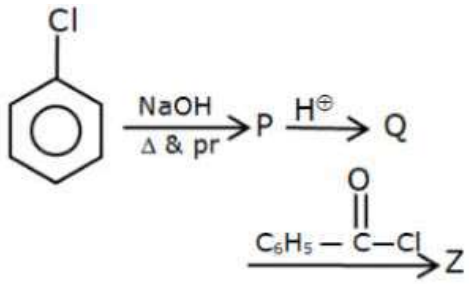
69. The plots of the extent of adsorption (x/m) v/s pressure at different temperature are as follows:



The correct order of increasing temp for curves I, II, III, IV are-

(1) $T_1 > T_2 > T_3 > T_4$ (2) $T_4 > T_3 > T_2 > T_1$

(3) $T_3 > T_2 > T_1 > T_4$ (4) can't be predicted

70. 

Incorrect statement is-

(1) P is more reactive than Q for electrophilic substitution reaction.

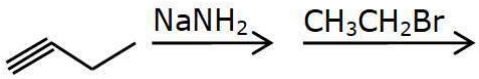
(2) Z is less reactive for electrophilic substitution reaction than Toluene

(3) Formation of Z is schottanBaumann reaction

(4) All

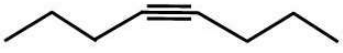
71. The species that do not contain peroxide ions, is-

(1) PbO_2 (2) H_2O_2 (3) SrO_2 (4) BaO_2

72. 

Product will be-

(1) 

(2) 

(3) 

(4) 

73. 100 mL of 0.3M acetic acid is shaken with 0.8 g wood charcoal. The final concentration of acetic acid in the solution after adsorption is 0.125M. The mass of acetic acid adsorbed per gram of charcoal is-

(1) 1.05 g (2) 0.0131 g

(3) 1.31 g (4) 0.131 g

74. The main oxides formed on combustion of Li, Na and K in excess of air are, respectively-

(1) LiO_2, Na_2O_2 and K_2O

(2) Li_2O_2, Na_2O_2 and KO_2

(3) Li_2O, Na_2O_2 and KO_2

(4) Li_2O, Na_2O and KO_2

75. In the reaction :

$$Me_3C—O—CH_2CH_3 + \underset{(1\ mole)}{HI} \longrightarrow$$

(1) $Me_3C - OH + CH_3CH_2I$

(2) $Me_3C - I + CH_3CH_2OH$

(3) $Me_3C - I + CH_3CH_2I$

(4) $Me_3C - OH + CH_3CH_2OH$

76. What weight of HNO_3 is needed to convert 62 gm of P_4 in H_3PO_4 in the reaction ?

$P_4 + HNO_3 \longrightarrow H_3PO_4 + NO_2 + H_2O$

(1) 63 gm (2) 630 gm

(3) 315 gm (4) 126 gm

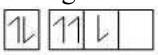
77. $Na_2B_4O_7.10H_2O \xrightarrow{Heat} X + NaBO_2$

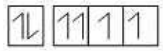
X are-

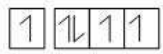
(1) Na_3BO_3 (2) $Na_2B_4O_7$

(3) B_2O_3 (4) $Na_2B_4O_7.H_2O$

78. Following electronic configuration are given

(P) 

(Q) 

(R) 

The correct statement is-

(1) 'P' shows violations of both pauli's and Hund's rules

(2) 'R' show violation of Aufbau's rule

(3) 'Q' show violation of pauli's exclusion principle

(4) All are correct

79. $CH_3OH \xrightarrow{PI_3} X \xrightarrow{KCN} Y \xrightarrow{Hydrolysis} Z$

The final product in the reaction is

(1) CH_3OH (2) HCOOH

(3) CH_3CHO (4) CH_3COOH

80. The incorrect statement regarding the structure of C_{60} is-

(1) It contains 12 six-membered rings and 24 five-membered rings.

(2) Each carbon atom forms three sigma bonds.

(3) The five-membered rings are fused only to six-membered rings.

(4) The six-membered rings are fused to both six and five-membered rings.

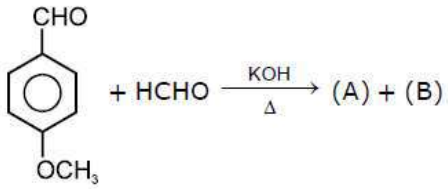
81. Which of the following statements is correct?

(1) When Z > 1, real gases are easier to compress than the ideal gas

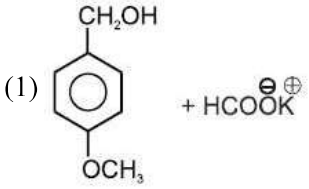
(2) When Z = 1, real gases get compressed easily.

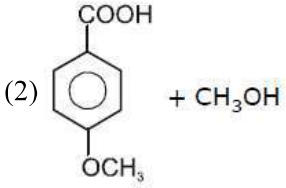
(3) When Z > 1, real gases are difficult to compress

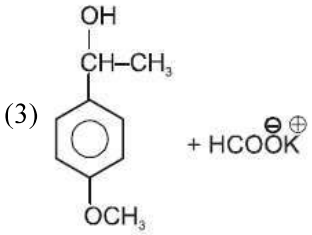
(4) When Z = 1, real gases are difficult to compress.

86. 

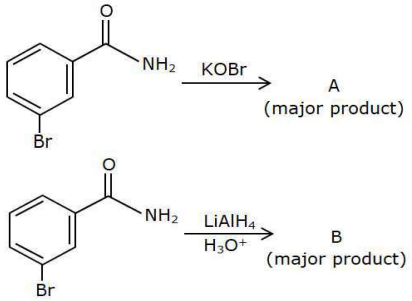
A and B are :

(1) 

(2) 

(3) 

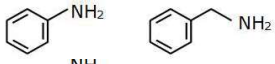
(4) Both (A) and (B)

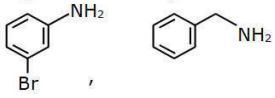
87. 

In the above reactions, product A and product B respectively are :

(1) 

(2) 

(3) 

(4) 

88. Which of the following compounds show optical isomerism?

I. cis-$[Co(NH_3)_4Cl_2]^+$ II. trans-$[Co(en)_2Cl_2]^+$

III. cis-$[Co(en)_2Cl_2]^+$ IV $[Co(en)_3]^{3+}$

Select the correct answer using the codes given below-

(1) I and II (2) II and III

(3) III and IV (4) I, III and IV

89. Among the oxides of nitrogen : N_2O_3, N_2O_4 and N_2O_5; the molecule(s) having nitrogen-nitrogen bond is/are-

(1) N_2O_3 and N_2O_5 (2) N_2O_4 and N_2O_5

(3) N_2O_3 and N_2O_4 (4) Only N_2O_5

90. What is false about "EDTA" ligand?

(1) It is a flexidentate ligand

(2) It is used to estimate Ca^{+2} & Mg^{+2} ions

(3) It is a unsymmetrical bidentate ligand

(4) It is a chelating ligand

91. Which of the following pairs will not form ideal solution?

(1) n-hexane + n-heptane

(2) Benzene + toluene

(3) Bromoethane + iodoethane

(4) Acetone + carbontetrachloride

92. The electrolytic method of reduction is employed for the preparation of metals that-

(1) are weakly electropositive

(2) are moderately electropositive

(3) are strongly electropositive

(4) form acidic oxides

93. pH of water is 7.0 at 25°C. If water is heated to 70°C, then-

(1) pH will decrease and solution becomes acidic

(2) pH will increase and solution becomes basic

(3) pH will remain constant as 7

(4) pH will decrease but solution will be neutral

94. The reaction occurring at the anode during charging in lead storage battery.

(1) $Pb^{2+} + 2e^- \rightarrow Pb$

(2) $Pb^{2+} + SO_4^{2-} \rightarrow PbSO_4$

(3) $Pb \rightarrow Pb^{2+} + 2e^-$

(4) $PbSO_4 + 2H_2O \rightarrow 2PbO_2 + 4H^+ + SO_4^{2-} + 2e^-$

95. The values of rate constant for the decomposition of N_2O_5,
$N_2O_5 \rightarrow N_2O_4 + \frac{1}{2}O_2$ are 3.50×10^{-5} and 5×10^{-3} at 27°C and 67°C, respectively. Calculate the energy of activation -

(1) 14.3 k Cal/Mol (2) 25.3 k Cal/Mol

(3) 35.3 k Cal/Mol (4) 40.3 k Cal/Mol

96. Which of the following is true about the size of tetrahedral and octahedral voids ?

(1) Size of tetrahedral void = Size of octahedral void

(2) Size of tetrahedral void > Size of octahedral void

(3) Size of tetrahedral void < Size of octahedral void

(4) Size of voids depends on the size of atoms present in packing

97. How many electrons in an atom have the following quantum numbers?
$n = 4, m_s = -1/2$

(1) 32 (2) 18

(3) 8 (4) 16

98. In the following reaction $SO_2Cl_2(g) \rightleftharpoons SO_2(g) + Cl_2(g)$; if inert gas is mixed at equilibrium then which of the following statement is correct for this reaction at constant volume?

(1) High quantity of Cl_2 is produce

(2) Decrease concentration of SO_2

(3) High quantity of SO_2Cl_2 is formed

(4) Does not change in concentration of SO_2Cl_2, SO_2 and Cl_2

99. A gas occupies 2 litre at STP. It is provided 58.63 joule heat so that its volume becomes 2.5 litre at 1 atm. Change in its internal energy in joules is-

(1) 8.63 (2) 12

(3) 18 (4) 25

100. In order to oxidise a mixture of one mole of each of FeC_2O_4, $Fe_2(C_2O_4)_3$, $FeSO_4$ and $Fe_2(SO_4)_3$ in acidic medium, the number of moles of $KMnO_4$ required is-

(1) 1.5 (2) 2

(3) 3 (4) 1

Botany - Section A

Section A Shall Consist Of 35 (Thirty-five) Questions In Each Subject .All Questions Are Compulsory.

101. In which of the following protozoans locomotory structure are absent-

(1) Amoeboid (2) Sporozoans
(3) Ciliated (4) Flagellate

102. What are the aquaporins in facilitated diffusion process ?

(1) Lipids (2) Carrier proteins
(3) Channel proteins (4) Carrier lipids

103. Which one of the following statements is correct?

(1) The region of the stem where leaves are born are called nodes while internodes are the between two nodes.
(2) The region of the stem where leaves are born are called internode while node are the portion between two Internode.
(3) Underground stems of some plants such as grass spread to new niches when older parts dies new plants are formed.
(4) (1) & (3) both

104. Mendel's law of segregation means that gametes always receive

(1) One pair of alleles
(2) One quarter of alleles
(3) One of the paired alleles
(4) Any pair of alleles

105. Sleeping sickness caused by :

(1) Entamoeba (2) Plasmodium
(3) Trypanosoma (4) Leishmania

106. The most valid explanation of stomatal opening and closing :

(1) Starch-Sugar exchange theory
(2) Transpiration theory
(3) K^+ ions exchange theory
(4) Photosynthesis in guard cell hypothesis

107. Thorns, more than two bundles of stamen are found in:

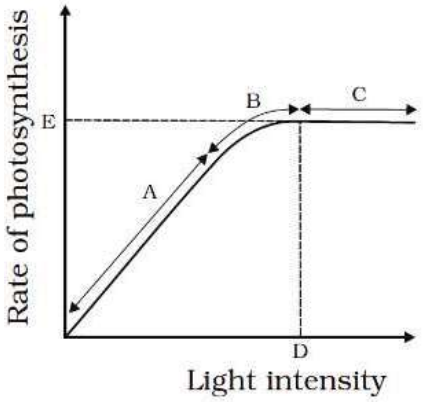
(1) Dianthus (2) Bargainvillea
(3) Opuntia (4) Citrus

108. Given are the statements regarding linkage of genes :

(i) The strength of the linkage is determined by the distance between the two genes
(ii) The strength of the linkage is inversely proportional to the distance between the two genes
(iii) The two genes are said to be linked when they fail to show independent assortment
out of these statements :

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

109. Study the given graph showing the effect of light intensity on the rate of photosynthesis. Which of the following statements regarding this is correct ?



(1) Light is a limiting factor in the region A
(2) Region C represents that rate of photosynthesis is not increased further by increasing light intensity because some other factor became limiting.
(3) Point D represents the intensity of light at which some other factor became limiting
(4) All of these

110. The bacterial genome contains :

(1) DNA and histone (2) DNA or histone

(3) DNA without histone (4) Neither DNA or histone

111. Palisade parenchyma is absent in leaves of :

(1) Gram (2) Sorghum

(3) Mustard (4) Soybean

112. A colourblind man marries a daughter of colourblind father, then in the offsprings-

(1) All sons are colourblind

(2) All daughters are colourblind

(3) Half sons are colourblind

(4) No daughter is colourblind

113. Reserve food material of fungi is

(1) Starch (2) Protein

(3) Glucose (4) Glycogen

114. The C_4 plants are photosynthetically more efficient than C_3 plants because -

(1) They have more chloroplasts

(2) The CO_2 compensation point is more

(3) CO_2 generated during photorespiration is trapped and recycled through PEP carboxylase

(4) The CO_2 efflux is not prevented

115. Anatomically fairly old dicotyledonous root is distinguished from the dicotyledonous stem by -

(1) Position of protoxylem

(2) Absence of secondary xylem

(3) Absence of secondary phloem

(4) Presence of cortex

116. The final proof for DNA as the genetic material came from the experiments of :

(1) Griffith (2) Hershey and Chase

(3) Avery, Mcleod and McCarty (4) Hargobind Khorana

117. Match Column-I with Column-II for housefly classification and select the correct option using the codes given below:

	Column-I		Column-II
a.	Family	(i)	Diptera
b.	Order	(ii)	Arthropoda
c.	Class	(iii)	Muscidae
d.	Phylum	(iv)	Insecta

(1) a-iii, b-ii, c-iv, d-i (2) a-iv, b-iii, c-ii, d-i

(3) a-iv, b-ii, c-i, d-iii (4) a-iii, b-i, c-iv, d-ii

118. In which of the following all three are macronutrients?

(1) Iron, copper, molybdenum

(2) Molybdenum, magnesium, manganese

(3) Nitrogen, sulphur, phosphorus

(4) Boron, zinc, manganese

119. In eukaryotes which of the following RNA takes part in splicing ?

(1) RNA primer

(2) Genomic RNA

(3) Sn RNA (Small nuclear RNA)

(4) Sc RNA (Small cytoplasmic RNA)

120. Which of the following is not the defining property of living ?

(1) Consciousness (2) Reproduction

(3) Cellular organisation (4) Metabolism

121. In Krebs' cycle, OAA accepts acetyl CoA to form :-

(1) Citric acid (2) Oxalosuccinate

(3) Fumarate (4) Succinyl CoA

122. One anticodon of t-RNA can identify more than one codon on m- RNA. What is this process called?

(1) Template hypothesis

(2) Richmond and Lang effect

(3) Wobble hypothesis

(4) Mass flow hypothesis

123. Development of egg without fertilization is called

(1) Parthenogenesis (2) Gametogenesis

(3) Metagenesis (4) Oogenesis

124. A glucose molecule was being oxidised in respiration pathway. One of the two acetyl CoA formed during this process was used in synthesis of fatty acid. What will be the net gain of ATP from this glucose molecule assuming one Glucose yields maximum 36 ATP molecules?

(1) 24 ATP (2) 26 ATP

(3) 30 ATP (4) 12 ATP

125. In virus-infected plants the meristematic tissues in both apical and axillary buds are free of virus because

(1) The dividing cells are virus resistant

(2) Meristems have anti viral compounds

(3) The cell division of meristems are faster than the rate of viral multiplication

(4) Viruses cannot multiply within meristem cell(s)

126. In diploid organism the gamete producing cells are called :

(1) Gamete mother cell (2) Meiocytes

(3) Both (A) and (B) (4) None of the above

127. In tissue culture, differentiation of shoot is controlled by :-

(1) Light Intensity

(2) Temperature shock

(3) Low Auxin +High CK $\left(\text{High } \frac{\text{Cyto}}{\text{Auxin}} \text{Ratio}\right)$

(4) None

128. Natural parthenogenesis occurs in

(1) Protozoans (2) Earthworm

(3) All insects (4) Honeybee

129. Some species colonise in an area & their population belongs more numerous whereas population of other species decline or disapper. This change occurs during :

(1) Succession (2) Reproduction

(3) Predation (4) Commensalism

130. Which of the following type of age pyramid reflects a expanding population growth?

(1) Triangular

(2) Bell-shaped

(3) Urn-shaped

(4) Both bell-shaped and urn-shaped

131. The primary producers of the deep-sea hydrothermal vent ecosystem are :

(1) Blue-green algae (2) Coral reefs

(3) Green algae (4) Chemosynthetic bacteria

132. Which of the following statement is not correct about energy flow in an ecosystem?

(1) Pyramid of energy is always straight

(2) Energy flow is unidirectional

(3) Energy flow is cyclic

(4) Ecological efficiency is generally 10%

133. Which one of the following is related to Ex-situ conservation of threatened animals and plants?

(1) Wildlife Safari parks (2) Biodiversity hot spots

(3) Amazon rainforest (4) Himalayan region

134. A lake which is rich in organic waste may result in-

(1) increase population of aquatic organisms due to minerals

(2) drying of the lake due to algal bloom

(3) increased population of fish due to lots of nutrients

(4) mortality of fish due to lack oxygen

135. Mg^{2+} is an activator of :-

(1)
Phosphoenol pyruvate carboxylase

(2)
Nitrogenase

(3)
Ribulose bisphosphate carboxylase oxygenase

(4)
Both (1) and (3)

Botany - Section B

Section B Shall Consist Of 15 (Fifteen) Questions In Each Subject. Candidate Needs To Attempt Any 10 (Ten) Questions Out Of 15 (Fifteen) In Each Subject.

136. Mustard, china rose, brinjal, Plum, rose, peach, guava, cucumber, sunflower how many plants have hypogynaous and perigynous flowers.

(1) 5 (2) 6
(3) 7 (4) 8

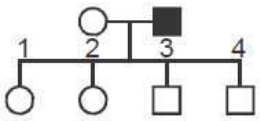
137. Identify the incorrect.

(1) Parenchyma–Perform photosynthesis, storage, secretion.
(2) Collenchyma–Provide mechanical support to the growing parts of the plants ssuch as yound stem and petiole of leaf.
(3) Cuticle which prevents the loss of water, Present in roots.
(4) In grasses the guard cells are dumb-bell shaped.

138. If an albino man marries with a normal woman and 50% offsprings are albino and 50% are normal the woman is

(1) Heterozygous normal (2) Homozygous normal
(3) Heterozygous carrier (4) None of the above

139. Observe the given pedigree chart, showing a genetic disorder caused due to a recessive allele at an autosomal locus :



If the 4th child marries with a woman suffering from the same genetic disorder, then what will be the probability, that their child will have the disease ?

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

140. 'Clones' are individuals that have exactly the same

(1) lifespan (2) physiology
(3) growth rate (4) genetic makeup

141. The triplet base sequence in a DNA is AAG, GAG, GAC, CAA, CCA. Which of the following reveals a frame shift mutation ?

(1) AGG AGG ACC ACC CAA (2) AAG GCG GAC CCA AC
(3) ACG GAC GAC CAG CCA (4) AAG GAG GAC CAA CCA

142. How many times flowering takes place in biennial plants :-

(1) Once (2) Twice
(3) Many (4) None

143. Select correct combination of statements for DNA fingerprinting.
(i) It is ELISA based technique
(ii) It is PCR based technique
(iii) It is used by forensic scientists.
(iv) It is based on the fingerprint of the individual.
(v) It is a test for paternity

(1) i, ii, iii (2) ii, iii, v
(3) i, iv ,v (4) i, iii, iv

144. Human skin cell contain....chromosomes and sperm contain.....chromosome :-

(1) 23, 46 (2) 46, 23
(3) 46, 46 (4) 23,23

145. Word dark reaction for biosynthetic phase of photosynthesis is misnomer word because

(1) Dark reaction occur during dark
(2) Dark reaction occur during day
(3) Dark reaction is completely free from light
(4) Dark reaction occur during short dark intervals

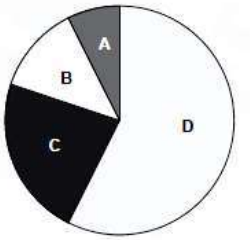
146. Conversion of fructose-6-phosphate to fructose-1, 6 bisphosphate in respiration requires:

(1) Hexokinase (2) Enolase
(3) Phosphofructokinase (4) Pyruvate kinase

147. Nearly all plants and an overwhelming majority (99 percent) of animals are categorised as -

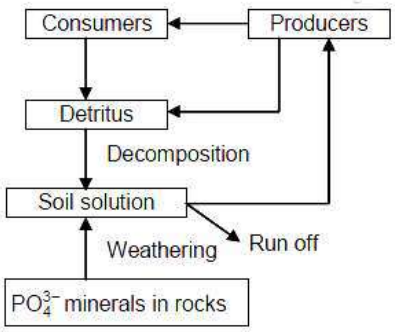
(1) Conformers -They can maintain a constant internal environment
(2) Conformers -They cannot maintain a constant internal environment
(3) Regulators -They can maintain a constant internal environment
(4) Regulators -They cannot maintain a constant internal environment

148. Select the correct option for A, B, C and D given in the figure with respect to the relative contribution of various green house gases to global warming.



(1)
$(A - CO_2), (B - CFC_s), (C - CH_4), (D - NO_2)$
(2)
$(A - NO_2), (B - CFC_s), (C - CH_4), (D - CO_2)$
(3)
$(A - NO_2), (B - CH_4), (C - CFCs), (D - CO_2)$
(4)
$(A - CH_4), (B - CFCs), (C - NO_2), (D - CO_2)$

149. Given below is a phosphorus cycle. Select the incorrect statement from the following.



(1) It represents phosphorus cycling in an aquatic ecosystem.
(2) It represents phosphorus cycing in a terrestrial ecosystem.
(3) The natural reservoir of phosphorus is forest rocks.
(4) There is a respiratory release of phosphorus into the atmosphere.

150. Which one of the following may be the reason for extinction of plant species due to human activities

(1) Earthquakes (2) Pollution
(3) Diseases (4) Evolution

Zoology -Section A

Section A Shall Consist Of 35 (Thirty-five) Questions In Each Subject .All Questions Are Compulsory.

151. Widal test is used for the diagnosis of :

(1) Typhoid (2) Malaria
(3) Pneumonia (4) Tuberculosis

152. Term "Coacervates" was given by

(1) Oparin (2) Haldane
(3) Urey (4) Miller

153. Which of the following hormone will be transported to pituitary gland by blood ?

(1) ADH (2) GnRH
(3) Prolactin (4) ACTH

154. Amphibians supposed to be evolved from the most primitive fish with stout and strong fins and could move on land and water, this was :

(1) Jawless fish (2) Coelacanth
(3) Chimera (4) Ichthyosaurs

155. Which of the following statements is correct in relation to the endocrine system?

(1) Releasing and Inhibitory hormones are produced by the pituitary gland

(2) Adenohypophysis is under direct neural regulation of the hypothalamus

(3) Organs in the body like gastrointestinal tract, heart, kidney and liver do not produce hormones

(4) Non–nutrient chemicals produced by the body in trace amount that act as intercellular messenger are known as hormones

156. The proper burial of dead for the first time started with which prehistoric man :

(1) Homo habilis (2) Neanderthal man

(3) Java man (4) Cromagnon man

157. Read the following four statements (A–D). Find out the true (T) and false (F) statements:

(A) Catecholamines stimulate the breakdown of glycogen, resulting in an increased concentration of glucose in blood.

(B) Thymosin play a major role in the differentiation of T–lymphocytes which provide cell mediated immunity.

(C) Aldosterone stimulates the reabsorption of K^+ and phosphate ions and excretion of Na^+ and water.

(D) Insulin is a peptide hormone, which reduces the cellular glucose uptake and utilisation.

(1) (A)-T, (B)-F, (C)-T, (D)- F

(2) (A)-T, (B)-T, (C)-F, (D)- F

(3) (A)-F, (B)-T, (C)-F, (D)- T

(4) (A)-T, (B)-T, (C)-T, (D)- F

158. Forelimbs of cat, lizard used in walking forelimbs of whale used in swimming and forelimbs of bats used in flying are an example of :

(1) Analogous organs (2) Adaptive radiation

(3) Homologous organs (4) Convergent evolution

159. Match the following -

a.	Cnidoblasts	(i)	Help in locomotion
b.	Comb plates	(ii)	Rasping organ
c.	Proboscis gland	(iii)	Balancing organ
d.	Radula	(iv)	anchorage, defense, capture prey
e.	Statocyst	(v)	Help in excretion

(1) a-i, b-ii, c-iii, d-v, e-iv

(2) a-iv, b-i, c-v, d-ii, e-iii

(3) a-i, b-iv, c-ii, d-iii, e-v

(4) a-ii, b-iii, c-i, d-iv, e-v

160. Hisardale is a new breed of sheep developed in Punjab by crossing :

(1) Marino ram and Bikaneri ewe

(2) Aseel ram and white leghorn ewe

(3) Rhode Island ram and white leghorn ewe

(4) Cochin ram and Ghagus ewe

161. Consider the statements given below regarding contraception and answer as directed there after:

(a) Medical Termination of Pregnancy (MTP) during first trimester is generally safe

(b) Generally chances of conception are nil until mother breast-feeds the infant upto two years.

(c) Intrauterine devices like copper T are effective contraceptives.

(d) Contraceptive pills may be taken one week after coitus to prevent conception

Which of the statements are **correct** ?

(1) a, c (2) a, b, d

(3) b, c, a (4) c, d

162. Cells of cartilage (chondrocyte) are enclosed in small cavities with in the matrix secreted by –

(1) Osteoclast (2) Osteoblast

(3) Chondroblast (4) Chondroclasts

163. Contraction of muscle fibres takes place by the **sliding of** :

(1) Thin fillaments over the actin filaments

(2) Thick filaments over the thin filaments

(3) Thin filaments over the thick filaments

(4) Thick filaments over the myosin filaments

164. Arachidonic acid is :-

(1) Non–essential fatty acid
(2) Essential fatty acid
(3) Poly unsaturated fatty acid
(4) Both A and C

165. In plasmodium, gametocyte stages are formed in

(1) Human liver
(2) Mosquito gut
(3) Human RBC
(4) Human salivary gland

166. Expiration takes place when the intrapulmonary pressure is :

(1) Greater than the atmospheric pressure
(2) Lesser then atmospheric pressure
(3) Equal to atmospheric pressure
(4) Equal to intrapleural pressure

167. Enterokinase is

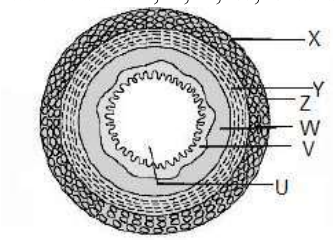
(1) Pancreatic hormone
(2) Intestine hormone
(3) Pancreatic enzyme
(4) Component of Intestinal juice

168. How does digestion of fats differ from digestion of proteins :

(1) Processing of fats does not require any digestive enzyme, where as processing of Proteins does
(2) Fats absorption occurs in stomach while Proteins get absorbed in small intestine.
(3) Most absorbed fats first enter lymphatic system whereas Proteins enter the blood

(4) Only fats get digested by bacteria in the large intestine before it can be absorbed.

169. Following is the diagrammatic representation of transverse section of gut in which the parts are labelled as X, Y, Z, W, U and V.



Find out the correct labelling in which crypts of lieberkuhn and Brunner's gland present respectively in -

(1) X & U
(2) U & V
(3) V & W
(4) X & Z

170. Which of the following option contain **correct** statements :-

(i) Indigestion is a reflex action controlled by medulla.
(ii) Irregular bowel movements cause constipation.
(iii) In Diarrhoea, increase liquidity of the faecal discharge
(iv) Kwashiorkar caused due to deficiency of calories.

(1) (i), (ii) & (iv)
(2) (i), (iii) & (iv)
(3) (ii) & (iii)
(4) (ii), (iii) & (iv)

171. Under normal physiological condition every 100 ml of deoxygenated blood delivers .....CO_2 to the alveoli :

(1) 20 ml
(2) 15 ml
(3) 4 ml
(4) 5 ml

172. Make the correct pairs

Column I		Column II	
(P)	Tricuspid valve	(i)	Right ventricle - pulmonary trunk
(Q)	Mitral valve	(ii)	Left ventricle - aorta
(R)	Atrial -semilunar valve	(iii)	Right atrium-right ventricle
(S)	Pulmonary-semilunar valve	(iv)	Left atrium- left ventricle

(1) P - iii, Q -iv, R -i, S -ii
(2) P - iv, Q -iii, R -i, S -ii
(3) P -iii, Q -iv, R - ii, S -i
(4) P -iv, Q -iii, R - ii, S -i

173. Which of the following statements is **correct** ?
(a) In Urochordates like Ascidia, Salpa, Doliolum, Notochord is present only in larval tail.
(b) In Cephalochordates like Branchiostoma (Amphioxus or Lancelet) notochord extends from head to tail region and is persistent throughout the life.
(c) In chondrichthyes mouth is located dorsally and notochord is persistent through out the life.
(d) In Cyclostomata like Petromyzon Scales, Jaw, Cranium, Vertebral column are absent.

(1) (a), (b), (c) (2) (a) and (b)
(3) All, except (d) (4) All of these

174. Which of the following in sewage treatment removes suspended solids?

(1) Secondary treatment (2) Primary treatment
(3) Sludge treatment (4) Tertiary treatment

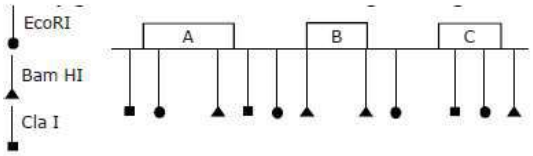
175. Match the following organisms with their respective characteristics :

(a)	Pila	(i)	Flame cells
(b)	Bombyx	(ii)	Comb plates
(c)	Pleurobrachia	(iii)	Radula
(d)	Taenia	(iv)	Malpighian tubules

Select the **correct** option from the following:

(1) (a)-(ii), (b)-(iv), (c)-(iii), d-(i)
(2) (a)-(iii), (b)-(ii), (c)-(iv), (d)-(i)
(3) (a)-(iii), (b)-(ii), (c)-(i), (d)-(iv)
(4) (a)-(iii), (b)-(iv), (c)-(ii), (d)-(i)

176. If only gene 'B' is to be isolated from given fragment of DNA. What is the choice of enzyme?



(1) Bam HI (2) EcoRI & Bam HI
(3) EcoRI only (4) All the three enzymes

177. Read the following statements and select the **correct ones** :
(i) Same kind of sticky ends are produced when a DNA has been cut by different restriction enzymes.
(ii) Endonucleases make cuts at specific position within the DNA.
(iii) Hind-II was the first restriction endonuclease to be discovered.
(iv) A bacteriophage has the ability to replicate within bacterial cells by integrating its DNA with bacterial DNA.
(v) Presence of more than one recognisation sites within the vector facilities the gene cloning.

(1) (i), (iii) and (v) (2) (i) and (iv)
(3) (iii) and (v) (4) (ii), (iii) and (iv)

178. The critical research areas of biotechnology are
I. Providing best catalyst as improved organism, usually a microbe or pure enzyme.
II. Creating optimal conditions through engineering for a catalyst to act.
III. Downstream processing technologies.
IV. Improving the quality of agrochemicals.
Which of the statements given above are **correct** ?

(1) I and II (2) I, II and III
(3) II, III and IV (4) I, III and IV

179. A plant species which has been exploited for the production of hirudin is

(1) Brassica napus (2) Zea mays
(3) Solanum nigrum (4) Oryza sativa

180. Gene therapy first used in the treatment of :–

(1) Albinism (2) Haemophilia
(3) SCID (4) None of these

Zoology -Section B

Section B Shall Consist Of 15 (Fifteen) Questions In Each Subject. Candidate Needs To Attempt Any 10 (Ten) Questions Out Of 15 (Fifteen) In Each Subject.

186. Dub sound is produced during closure of

(1) Semilunar valves (2) Bicuspid valve
(3) Tricuspid valve (4) Both (A) and (B)

187. End bulbs of Krause perceive the sensation of

(1) Touch (2) Heat
(3) Cold (4) Pressure

188. Which of the following contraceptive devices make uterus unsuitable for implantation ?

(1) Cervical cap (2) Progestasert
(3) Implant (4) Multiload–375

189. When a stimulus is applied at a site on the polarized membrane, the membrane at that site becomes freely permeable to _____ ions. It causes rapid influx of ____ ions leading ____ of the membrane -

(1) Na^+, K^+, depolarization (2) K^+, K^+ depolarization
(3) K^+, Na^+, depolarization (4) Na^+, Na^+ depolarization

190. Total number of vertebro-sternal ribs are :

(1) 7 (2) 6
(3) 14 (4) 4

191. No significant role of working of Na-K ATPase pump can be noticed during :

(1) Polarisation (2) Depolarisation
(3) Repolarisation (4) Hyperpolarisation

192. Read the following statements (A - D)

(i) Benign tumors normally remain confined to their original location.
(ii) Malignant tumors grow very rapidiy invading and damaging the surrounding normal tissues.
(iii) Metastasis is the most feared property of malignant tumors.
(iv) Proto-oncogene when activated under certain conditions, Could lead to oncogenic transformation of cells.
How many of the above statements are **correct**?

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

193. Minimum amount of urea is found in

(1) Hepatice Vein (2) Hepatice Artery
(3) Renal vein (4) Renal artery

194. In majority of humans, the loop of Henle is :

(1) Too short and extends only very little into the cortex.
(2) Too long and extends very deep into the cortex.
(3) Too short and extends only very little into the medulla.
(4) Too long and extends very deep into the medulla.

195. Fill in the blanks.
(a) Reabsorption of water from distal parts of the tubules is facilitated by hormone ___**A**___.
(b)Dialysis fluid contain all the constituents as in plasma except ___**B**___.
(c) A healthy adult human excretes (on an average) ___**C**___ gm of urea/day.

(1) A → Aldosterone, B → Nitrogenous wastes, C → 25-30
(2) A → Aldosterone, B → Nitrogenous wastes, C → 20-25
(3) A → ADH, B → Nitrogenous wastes, C → 25-30
(4) A → ADH, B → Nitrogenous wastes,C → 20-25

196. Find out the characters which are similar in Bufo and Calotes.

(i) The skin is dry and cornified with epidermal scales.

(ii) Tympanum represents the ear.

(iii) The heart is three chambered.

(iv) Fertilisation is internal and development is direct.

(v) Oviparous

(1) i, ii, iii (2) ii, iii, v

(3) i, iii, iv (4) ii, iv, v

197. What significant changes occur during diakinesis of meiotic prophase I :-

(1) Break down of nucleolus

(2) Fragmentation of nuclear membrane

(3) Terminalization

(4) All of the above

198. Select the **Incorrect** options about the nuclear envelop.

(1) The nuclear envelope is a double membrane system

(2) Space between the 2 membranes is called the perinuclear space

(3) Nuclear membrane is not responsible for maintaing the transport of ions, solutes & other molecules with cytoplasm

(4) Transport through nuclear pore is regulated by annulns.

199. Read the following four statements (A-D) about certain mistakes in two of them-

(A) The first transgenic buffalo, Rosie produced milk which was human alpha-lactalbumin enriched.

(B) Restriction enzymes are used in isolation of DNA from other macro molecules.

(C) Downstream processing is one of the steps of R-DNA technology.

(D) Disarmed pathogen vectors are also used in transfer of R-DNA into the host.

Which are the two statements having mistakes?

(1) Statements (A) and (B) (2) Statements (B) and (C)

(3) Statements (C) and (D) (4) Statements (A) and (C)

200. Eli Lilly, an American company prepared two DNA sequences corresponding to A and B, chains of human insulin, and introduced them in plasmids of E.Coli to produce insulin chains. Chains A and B were produced **__(i)__,** extracted and combined by creating **__(ii)__.**

(1) (i)- Separately (ii)-Peptide bond

(2) (i)- By coiling (ii)-Ionic bond

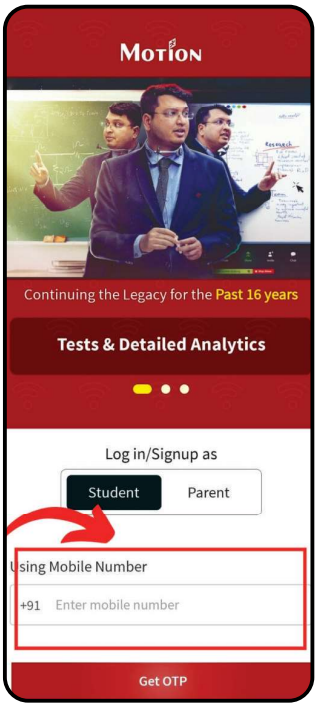
(3) (i)- Separately (ii)-Disulphide bond

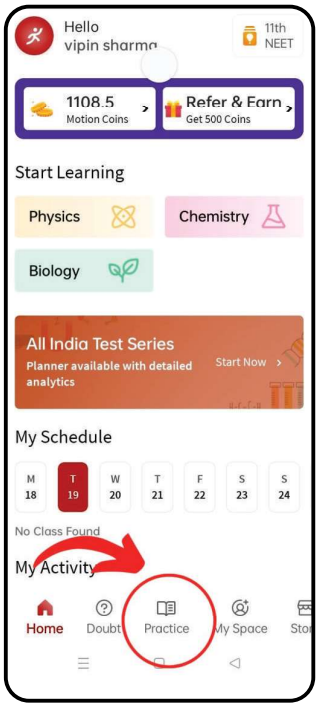
(4) (i)- Simultaneously (ii)-Hydrogen bond

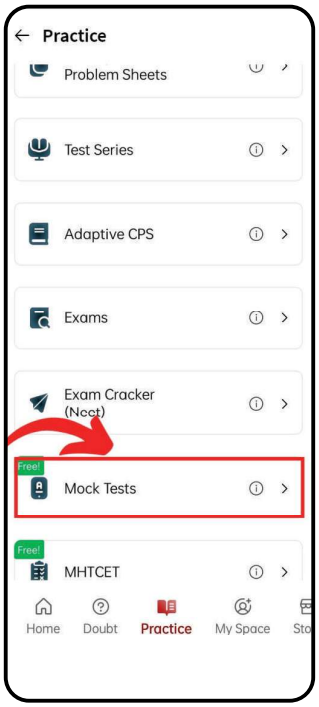
STEPS TO APPEAR FOR THE TEST & GET RESULTS

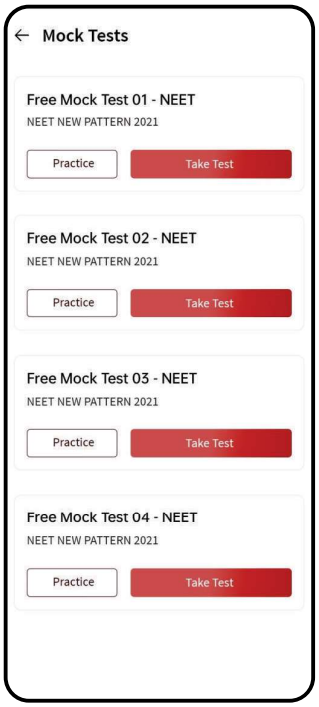
Scan the QR code to download the **MOTION LEARNING APP.**

Enter Your Details → On The Main Page Select The **"Practice"** Icon → Select the **"Mock Test"** tab and click on it. → Access all 10 mock test papers available for your practice.









मोशन है, तो भरोसा है।