

Free Mock Test 06 - NEET

(Target: NEET 2024)



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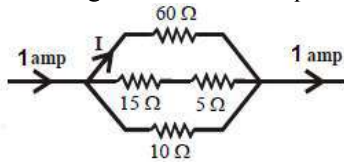
Physics - Section A

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

1. Eight small drops, each of radius r and having same charge q are combined to form a big drop. The ratio between the potentials of the bigger drop and the smaller drop is

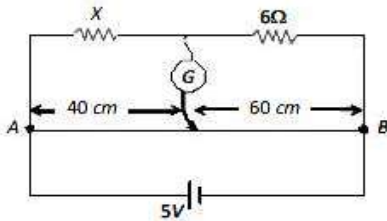
- (1) 8 : 1 (2) 4 : 1
(3) 2 : 1 (4) 1 : 8

2. The magnitude of I in ampere unit is :



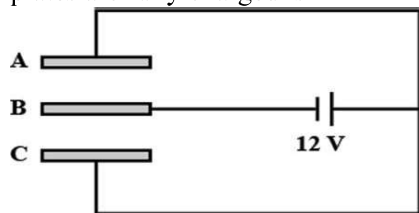
- (1) 0.1 (2) 0.3
(3) 0.6 (4) none of these

3. In the circuit shown, a meter bridge is in its balanced state. The meter bridge wire has a resistance 0.1 ohm/cm . The value of unknown resistance X and the current drawn from the battery of negligible resistance is



- (1) 6Ω , 5 amp (2) 10Ω , 0.1 amp
(3) 4Ω , 1.0 amp (4) 12Ω , 0.5 amp

4. Three plates A, B, C each of area 50 cm^2 have separation 3 mm between A and B and 3 mm between B and C. The energy stored when the plates are fully charged is

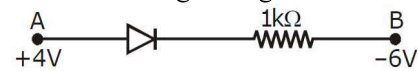


- (1) $1.6 \times 10^{-9} \text{ J}$ (2) $2.1 \times 10^{-9} \text{ J}$
(3) $5 \times 10^{-9} \text{ J}$ (4) $7 \times 10^{-9} \text{ J}$

5. A car moving on a horizontal road may be thrown out of the road in taking a turn :-

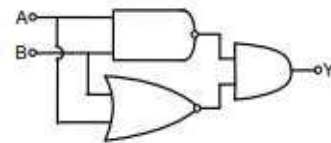
- (1) by the gravitational force
(2) due to lack of proper centripetal force
(3) due to rolling friction between the tyres and the road
(4) due to reaction of the road

6. Consider the junction diode as ideal. The value of current flowing through AB is :



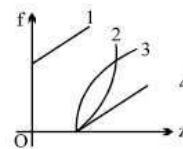
- (1) 0 A (2) 10^{-2} A
(3) 10^{-1} A (4) 10^{-3} A

7. For the given logic gate network, the output at Y when $A = 1, B = 1$ and $A = 0, B = 0$ are



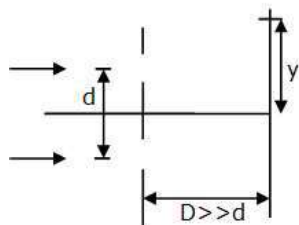
- (1) 1, 0 (2) 0, 1
(3) 1, 1 (4) 0, 0

8. The frequencies (f) of K_{α} lines of different material (z) are plotted on a graph as shown in figure. Choose the correct variation which satisfies the Moseley's law



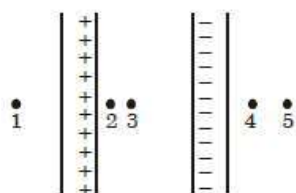
- (1) 2 (2) 3
(3) 4 (4) 1

9. Consider the YDSE arrangement shown in figure. If $d = 10\lambda$. Then, position of 8th maxima is



- (1) $y = \frac{D}{10}$ (2) $y = \frac{D}{3}$
 (3) $y = \frac{4D}{5}$ (4) $y = \frac{4D}{3}$

10. Two large parallel plates carry charge of equal magnitude, one positive and the other negative, that is distributed uniformly over their inner surfaces. Rank the points 1 through 5 according to the magnitude of the electric field at the points, least to greatest.



- (1) 1, 2, 3, 4, 5
 (2) 5, 4, 3, 2, 1
 (3) 1, 4 and 5 tie, then 2 and 3 tie
 (4) 2 and 3 tie, then 1 and 4 tie, then 5

11. A 250 - Turn rectangular coil of length 2.1 cm and width 1.25 cm carries a current of $85\mu\text{A}$ and subjected to a magnetic field of strength 0.85 T. Work done for rotating the coil by 180° against the torque is :

- (1) $9.1\mu\text{J}$ (2) $4.55\mu\text{J}$
 (3) $2.3\mu\text{J}$ (4) $1.15\mu\text{J}$

12. The band gap in Germanium and silicon in eV respectively is

- (1) 0.7, 1.1 (2) 1.1, 0.7
 (3) 1.1, 0 (4) 0, 1.1

13. Which of the following is a wrong description of binding energy of a nucleus ?

- (1) It is the energy required to break a nucleus into its constituent nucleons.
 (2) It is the energy released when free nucleons combine to form a nucleus
 (3) It is the sum of the rest mass energies of its nucleons minus the rest mass energy of the nucleus
 (4) It is the sum of the kinetic energy of all the nucleons in the nucleus

14. A police jeep is chasing with, velocity of 45 km/h a thief in another jeep moving with velocity 153 km/h . Police fires a bullet with muzzle velocity of 180m/s . The velocity it will strike the car of the thief is.

- (1) 150 m/s (2) 27 m/s
 (3) 450 m/s (4) 250 m/s

15. A nucleus (of nuclear density ρ) disintegrates into two daughter nuclei with masses in the ratio 8 : 27. Density of the smaller nucleus is :

- (1) $\frac{2}{3}\rho$ (2) $\frac{2}{5}\rho$ (3) $\frac{8}{27}\rho$ (4) ρ

16. The value of Stefan's constant in CGS system is $\sigma = 5.67 \times 10^{-5} \text{ erg s}^{-1} \text{ cm}^{-2} \text{ K}^{-4}$. Its value in SI units is _____.

- (1) $5.67 \times 10^{-4} \text{ J s}^{-1} \text{ m}^{-2} \text{ K}^{-4}$
 (2) $5.67 \times 10^{-2} \text{ J s}^{-1} \text{ m}^{-2} \text{ K}^{-4}$
 (3) $5.67 \times 10^{-8} \text{ J s}^{-1} \text{ m}^{-2} \text{ K}^{-4}$
 (4) $5.67 \times 10^{-6} \text{ J s}^{-1} \text{ m}^{-2} \text{ K}^{-4}$

17. When ${}_{90}\text{X}^{288}$ gets converted into ${}_{80}\text{Y}^{260}$, then the number of α and β -particle emitted will be respectively

- (1) 7, 4 (2) 5, 7 (3) 4, 7 (4) 7, 7

18. According to Bohr atom model, in which of the following transitions will the frequency be maximum?

- (1) $n=2$ to $n=1$ (2) $n=4$ to $n=3$
 (3) $n=5$ to $n=4$ (4) $n=3$ to $n=2$

19. The following truth table corresponds to

Inputs		Output
X	Y	Z
0	0	1
0	1	0
1	0	0
1	1	1

- (1) XOR gate (2) OR gate
(3) NAND gate (4) XNOR gate

20. Which of the prism is used to see infrared spectrum of light :-

- (1) rock salt (2) Nicol
(3) flint (4) crown

21. A particle moving with velocity that is three times that of velocity of electron. If ratio of the de-Broglie wavelength of particle with respect to electron is 1.8×10^{-4} . Find of mass of particle ($m_e = 9.1 \times 10^{-31}$ kg)

- (1) 1.6×10^{-27} kg (2) 1.3×10^{-13} kg
(3) 2.6×10^{-27} kg (4) 6.63×10^{-34} kg

22. Birds is flying at 12m height above the water surface and fish is swimming 16m below the water surface ($\mu_{\text{water}} = 4/3$). Find apparent distance of bird with respect to fish:

- (1) 28 (2) 32 (3) 26 (4) 12

23. The speed of electrons in a scanning electron microscope is 1×10^7 ms⁻¹. If the protons having the same speed are used instead of electrons, then the resolving power of scanning proton microscope will be changed by a factor of :

- (1) $\frac{1}{\sqrt{1837}}$ (2) $\sqrt{1837}$
(3) 1837 (4) $\frac{1}{1837}$

24. The box of a pin hole camera, of length L, has a hole of radius a. It is assumed that when the hole is illuminated by a parallel beam of light of wavelength λ the spread of the spot (obtained on the opposite wall of the camera) is the sum of its geometrical spread and the spread due to diffraction. The spot would then have its minimum size (say b_{min}) when :

- (1) $a = \sqrt{\lambda L}$ and $b_{\text{min}} = \left(\frac{2\lambda^2}{L}\right)$
(2) $a = \sqrt{\lambda L}$ and $b_{\text{min}} = \sqrt{4\lambda L}$
(3) $a = \frac{\lambda^2}{L}$ and $b_{\text{min}} = \sqrt{4\lambda L}$
(4) $a = \frac{\lambda^2}{L}$ and $b_{\text{min}} = \left(\frac{2\lambda^2}{L}\right)$

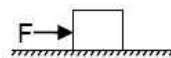
25. The force required just to move a body up an inclined plane is double the force required just to prevent the body sliding down. If the coefficient of friction is 0.25, the angle of inclination of the plane is

- (1) 30° (2) 45°
(3) $\tan^{-1}\left(\frac{1}{4}\right)$ (4) $\tan^{-1}\left(\frac{3}{4}\right)$

26. A block P kept on an inclined surface just begins to slide if the inclination is 37°. The block is replaced by another block Q and it is found that it just begins to slide if the inclination is 43° -

- (1) $M_P > M_Q$ (2) $M_P < M_Q$
(3) $M_P = M_Q$ (4) all the three are possible

27. A block of mass 2 kg is placed on the floor. The coefficient of static friction is 0.4. A force of 2.5 N is applied on the block as shown in figure. The contact force between the block and the floor is



- (1) 20.15 N (2) 20 N
(3) 10 N (4) 12.5 N

28. A chain of mass M is placed on a smooth table with 1/n of its length L hanging over the edge. The work done in pulling the hanging portion of the chain back to the surface of the table is -

- (1) MgL/n (2) $MgL/2n$
(3) MgL/n^2 (4) $MgL/2n^2$

29. The work done by the force $\vec{F} = 6\hat{i} + 2\hat{j}$ N in displacing an object from $\vec{r}_1 = 3\hat{i} + 8\hat{j}$ m to $\vec{r}_2 = 5\hat{i} - 4\hat{j}$ m, is

- (1) 12 J (2) -36 J
(3) 36 J (4) -12 J

30. A bucket full of water weighs 5 kg, it is pulled from a well 20 m deep. There is a small hole in the bucket through which water leaks at a constant rate. If it is observed that for every metre the bucket loses 0.2 kg mass of water, then the total work done in pulling the bucket up from the well is [$g = 10 \text{ ms}^{-2}$]

- (1) 600 J (2) 400 J
(3) 100 J (4) 500 J

31. The displacement equation of a particle is $x = 3 \sin 2t + 4 \cos 2t$. The amplitude and maximum velocity will be respectively

- (1) 5, 10 (2) 3, 2
(3) 4, 2 (4) 3, 4

32. The velocity of waves in a string fixed at both ends is 2 m/s. The string forms standing waves with nodes 5.0 cm apart. The frequency of vibration of the string (in Hz) is :

- (1) 40 (2) 30
(3) 20 (4) 10

33. The gravitational force with which the earth attracts the moon :

- (1) Is less than the force with which the moon attracts the earth
(2) Is equal to the force with which the moon attracts the earth
(3) Is greater than the force with which the moon attracts the earth
(4) Varies with the phases of the moon

34. If $I = 50 \text{ kg} - \text{m}^2$, then how much torque will be applied to stop it in 10 sec. Its initial angular speed is 20 rad / sec :

- (1) 100 N - m (2) 150 N - m
(3) 200 N - m (4) 250 N - m

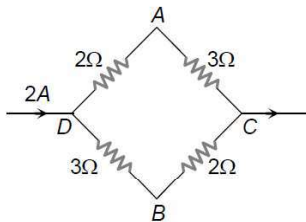
35. A spherical planet has a mass M_p and diameter D_p . A particle of mass m falling freely near the surface of this planet will experience an acceleration due to gravity equal to :

- (1) GM_p / D_p^2 (2) $4 GM_p m / D_p^2$
(3) $4 GM_p / D_p^2$ (4) $GM_p m / D_p^2$

Physics - Section B

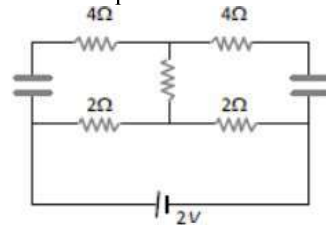
Section B Shall Consist Of 15 (Fifteen) Questions In Each Subject. Candidate Needs To Attempt Any 10 (Ten) Questions Out Of 15 (Fifteen) In Each Subject.

36. A current of 2A flows in a system of conductors as shown. The potential difference ($V_A - V_B$) will be



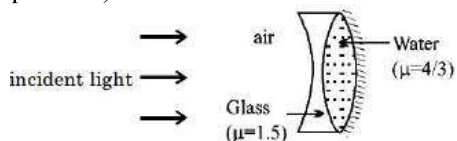
- (1) +2V (2) +1V
(3) -1V (4) -2V

37. Find the power of the circuit in steady state

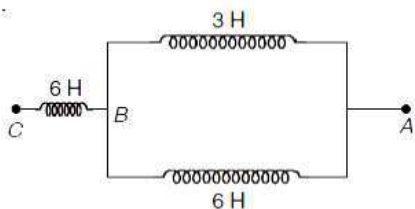


- (1) 1.5 W (2) 2 W
(3) 1 W (4) None of these

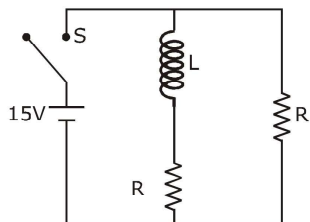
38. The radii of curvature of the left and right surfaces of the concave lens are 10 cm and 15 cm respectively. The radius of curvature of the mirror is 15 cm. (Consider direction of incident light as positive)



- (1) equivalent focal length of the combination is -36 cm
 (2) equivalent focal length of the combination is $+36$ cm
 (3) the system behaves like a concave mirror
 (4) the system behaves like a convex mirror
39. Find potential difference between A and C, if potential difference between A and B at a certain instant is 10 V.



- (1) 12 V (2) 40 V
 (3) 30 V (4) Zero
40. In the figure shown, a circuit contains two identical resistors, with resistance $R = 5\Omega$ and an inductance with $L = 2\text{mH}$. An ideal battery of 15 V is connected in the circuit. What will be the current through the battery long after the switch is closed?



- (1) 6 A (2) 5.5 A
 (3) 3 A (4) 7.5 A

41. If θ_1 and θ_2 be the apparent angles of dip observed in two vertical planes at right angles to each other, then the true angle of dip θ is given by :
- (1) $\cot^2 \theta = \cot^2 \theta_1 + \cot^2 \theta_2$
 (2) $\tan^2 \theta = \tan^2 \theta_1 + \tan^2 \theta_2$
 (3) $\cot^2 \theta = \cot^2 \theta_1 - \cot^2 \theta_2$
 (4) $\tan^2 \theta = \tan^2 \theta_1 - \tan^2 \theta_2$

42. Two masses M and m are attached to a vertical axis by weightless threads of combined length ℓ . They are set in rotational motion in a horizontal plane about this axis with constant angular velocity ω . If the tensions in the threads are the same during motion, the distance of M from the axis is.
- (1) $\frac{M\ell}{M+m}$ (2) $\frac{M+m}{M} \ell$
 (3) $\frac{m\ell}{M+m}$ (4) $\frac{M+m}{M} \ell$

43. At which of the following temperatures would the molecules of a gas have twice the average kinetic energy they have at 27°C :-
- (1) 327°C (2) 373°C
 (3) 393°C (4) 586°C

44. The value of γ is $\frac{4}{3}$ for an adiabatic process of an ideal gas for which internal energy $U = k + n PV$, where k is a constant. The value of n is
- (1) 2 (2) 3 (3) 4 (4) 5

45. On the basis of kinetic theory of gases, the gas exerts pressure because its molecules:
- (1) suffer change in momentum when impinge on the walls of container.
 (2) continuously stick to the walls of container.
 (3) continuously lose their energy till it reaches wall.
 (4) are attracted by the walls of container.

46. A mass M , attached to a spring, oscillates with a period of 2s. If the mass is increased by 4 kg, the time period increases by one second. Assuming that Hooke's law is obeyed, the initial mass M was
- (1) 3.2 kg (2) 1 kg
 (3) 2 kg (4) 8 kg

47. An Indian rubber cord L metre long and area of cross-section A metre² is suspended vertically. Density of rubber is D kg/metre³ and Young's modulus of rubber is E . If the wire extends by ℓ metre under its own weight, then extension ℓ is

- (1) $L^2 Dg/E$ (2) $L^2 Dg/2E$
 (3) $L^2 Dg/4E$ (4) L

48. The current in a LR circuit builds up to $3/4^{\text{th}}$ of its steady state value in 4 sec. The time constant of this circuit is :-

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

49. In series L-R circuit with DC source current grows from zero to a steady value (i_0). The value of current at $t = 2\tau$ ($\tau = \frac{L}{R}$) is given by (Let at $t = 0, i = 0$)

- (1) $i = i_0 (e^{-1})$ (2) $i = i_0 (e^{-2})$
 (3) $i = i_0 (1 - e^{-2})$ (4) $i = i_0 (1 - e^{-2})$

50. Escape velocity of a 1 kg body on a planet is 100m/s. Potential energy of body at that planet is :

- (1) $-5000J$ (2) $-1000J$
 (3) $-2400J$ (4) $-10000J$

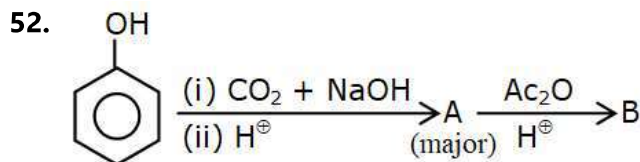
Chemistry - Section A

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

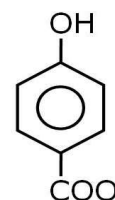

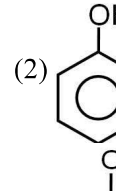
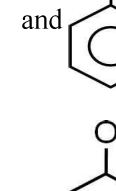
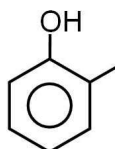
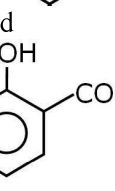
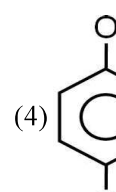
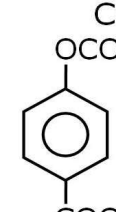
51. $\text{CH}_3 - \text{CH}_2 - \text{CHO} \xrightarrow[\text{alkali}]{\text{dil.}}$ Product.

The product in the above reaction is-

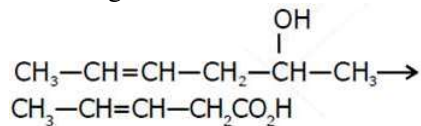
- (1) $\text{CH}_3 - \text{CH}_2\text{COOH}$
 (2) $\text{CH}_3 - \text{CH}_2 - \text{CH}_2 - \text{OH}$
 (3) $\begin{array}{c} \text{CH}_3 - \text{CH}_2 - \text{CH} - \text{CH}_2 - \text{CHO} \\ | \\ \text{OH} \end{array}$
 (4) $\begin{array}{c} \text{CH}_3 - \text{CH}_2 - \text{CH} - \text{CH} - \text{CHO} \\ | \qquad \qquad | \\ \text{OH} \qquad \qquad \text{CH}_3 \end{array}$



Product A and B is respectively-

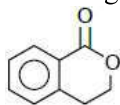
- (1)  and 
 (2)  and 
 (3)  and 
 (4)  and 

53. Which is the most suitable reagent for the following transformation?



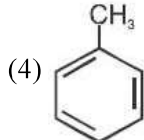
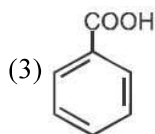
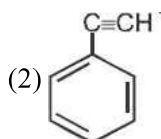
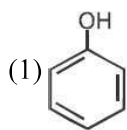
- (1) $\text{K}_2\text{Cr}_2\text{O}_7$ (2) Tollen's reagent
(3) I_2/NaOH & H^\oplus (4) alkaline KMnO_4

54. Which of the following reactant on reaction with conc. NaOH followed by acidification gives the following lactone as the only product?



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

55. Which of the following is most acidic?



56. The vapour pressures of pure liquids A and B are 400 and 600 mmHg, respectively at 298 K. The mole fraction of liquid B is 0.5 in the mixture. The vapour pressure of the final solution, the mole fractions of, components A and B in vapour phase, respectively are-

- (1) 500 mm Hg, 0.5, 0.5 (2) 450 mm Hg, 0.5, 0.5
(3) 450 mm Hg, 0.4, 0.6 (4) 500 mm Hg, 0.4, 0.6

57. The osmotic pressure of decimolar solution of urea at 27°C is-

- (1) 2.49 bar (2) 5.0 bar
(3) 3.4 bar (4) 1.25 bar

58. 100 ml of 1.0 N CH_3COOH are added to 100 ml of 1.0 N NaOH solution. What will be the pH of resulting solution?

- (1) 7.0 (2) > 7.0
(3) < 7.0 (4) Zero

59. In the electrolysis of aqueous NaCl , how long would you pass a current of 1.0 A through the cell to convert 1.0 L solution of 1 M concentration into 1 M NaOH ?

- (1) 12.6 hr (2) 20.4 hr
(3) 26.8 hr (4) 30.2 hr

60. The reaction $2\text{X} \rightarrow \text{B}$ is a zeroth order reaction. If the initial concentration of X is 0.2 M, the half-life is 6 h. When the initial concentration of X is 0.5 M, the time required to reach its final concentration of 0.2 M will be-

- (1) 9.0 h (2) 12.0 h
(3) 18.0 h (4) 7.2 h

61. Which of the following is an example of ionic crystal solid?

- (1) Diamond (2) LiF
(3) Li (4) Silicon

62. Smoke is a dispersion of-

- (1) gas in gas (2) gas in solid
(3) solid in gas (4) liquid in gas

63. For coagulation of arsenious sulphide sol, which one of the following salt solution will be most effective?
 (1) NaCl (2) Na₃PO₄
 (3) BaCl₂ (4) AlCl₃
64. Avogadro's number is the number of molecules present in-
 (1) 22.4 litre of a gas of NTP (2) 1 mole of substance
 (3) g mol. wt. of a substance (4) All of the above
65. A certain radiostation broadcasts at a frequency of 900 kHz. The wavelength of electromagnetic radiations broadcast by radiostation is-
 (1) 900 m (2) 270 m
 (3) 2.70 m (4) 330 m
66. If the pressure of the gas contained in a closed vessel is increased by 20% when heated by 273°C then its initial temperature must have been-
 (1) 1092°C (2) 1029 K
 (3) 1000 K (4) None of these
67. If the equilibrium constant for $N_2(g) + O_2(g) \rightleftharpoons 2NO(g)$ is K, the equilibrium constant for $\frac{1}{2}N_2(g) + \frac{1}{2}O_2(g) \rightleftharpoons NO(g)$ will be-
 (1) K² (2) K^{1/2} (3) $\frac{1}{2}K$ (4) K
68. Which of the following statement is/are correct?
 (1) Entropy of egg decreases on boiling
 (2) Entropy change of sublimation is positive
 (3) Entropy decreases during fusion of ice
 (4) All of these
69. The correct order of following 3d metal oxides, according to their oxidation numbers is-
 (a) CrO₅ (b) Fe₂O₃ (c) MnO₂ (d) V₂O₅ (e) Cu₂O
 (1) (a) > (c) > (d) > (b) > (e)
 (2) (d) > (a) > (b) > (c) > (e)
 (3) (a) > (d) > (c) > (b) > (e)
 (4) (c) > (a) > (d) > (e) > (b)
70. The correct values of ionization energies (in kJ mole⁻¹) of Si, P, Cl and S are respectively-
 (1) 786, 1012, 999, 1256 (2) 1012, 786, 999, 1256
 (3) 786, 1012, 1256, 999 (4) 786, 999, 1012, 1256
71. Which of the following elements will have highest second ionisation enthalpy?
 (1) 1s²2s²2p⁶3s² (2) 1s²2s²2p⁶3s¹
 (3) 1s²2s²2p⁶3s²3p² (4) 1s²2s²2p⁶3s²3p³
72. Which of the following statement is correct ?
 (1) BF₃ is weaker lewis acid than BBr₃
 (2) BF₃ has greater extent of back bonding than BBr₃
 (3) Both
 (4) None
73. According to molecular orbital theory –
 (1) Two AO forms two MO of same energy level
 (2) Two MO forms two AO of different energy level
 (3) Two AO forms two MO of different energy level
 (4) Two MO forms two MO of different energy level
74. Extraction of gold and silver involves leaching with CN⁻ ion. Silver is later recovered by-
 (1) Displacement with Zn (2) Zone refining
 (3) Distillation (4) Liquefaction
75. Correct formula of prussian blue compound is-
 (1) Fe[Fe(CN)₆] (2) Fe₃[Fe(CN)₆]₂
 (3) K₃[Fe(CN)₆] (4) Fe₄[Fe(CN)₆]₃
76. The geometry and magnetic behaviour of the complex [Ni(CO)₄] are-
 (1) square planar geometry and paramagnetic
 (2) tetrahedral geometry and diamagnetic
 (3) square planar geometry and diamagnetic
 (4) tetrahedral geometry and paramagnetic

77. Which of the following element form interstitial hydride?

- (1) Si (2) Ni
(3) Na (4) Mg

78. Largest group of modern periodic table is-

- (1) I A (2) II A
(3) III B (4) II B

79. Increasing order of oxidising nature is-

- (1) Cl < Br < I < F (2) Cl < I < Br < F
(3) I < F < Cl < Br (4) I < Br < Cl < F

80. Second period elements show different properties from their respective group due to-

- (1) small size
(2) absence of vacant d-orbital
(3) Both are correct
(4) None of these

81. Method by which acetaldehyde can not be prepared is-

- (1) Reduction of Ethanenitrile with SnCl_2/HCl followed by H_2O
(2) Oxidation of Ethanol with P.C.C.
(3) Alkaline hydrolysis of ethylidene chloride
(4) acidic hydrolysis of acetamide

82. Which of the following alcohol undergo dehydration on passed over heated copper at 573 K?

- (1) $\text{CH}_3\text{CH}_2\text{CH}_2\text{CH}_2\text{OH}$ (2) $\text{CH}_3\text{CH}_2\text{CH}(\text{OH})\text{CH}_3$
(3) $(\text{CH}_3)_2\text{CHCH}_2\text{OH}$ (4) $(\text{CH}_3)_3\text{COH}$

83. Ozonolysis of an organic compound given formaldehyde as one of the products. This confirms the presence of-

- (1) two ethylenic double bonds (2) a vinyl group
(3) an isopropyl group bond (4) an acetylenic triple bond

84. $\text{CH}_3-\text{C}\equiv\text{N} + \text{CH}_3\text{MgBr} \xrightarrow{\text{Dry ether}} \xrightarrow{\text{H}_3\text{O}^+} \text{A}$

$\text{O}=\text{C}=\text{O} + \text{CH}_3\text{MgBr} \xrightarrow{\text{Dry ether}} \xrightarrow{\text{H}_3\text{O}^+} \text{B}$

Product 'A' and 'B' respectively is-

- (1) $\text{CH}_3\text{COCH}_3 \Rightarrow \text{A}$, $\text{CH}_3\text{COOH} \Rightarrow \text{B}$
(2) $\text{CH}_3\text{COOH} \Rightarrow \text{A}$, $\text{CH}_3\text{COCH}_3 \Rightarrow \text{B}$
(3) $(\text{CH}_3)_3\text{C}-\text{OH} \Rightarrow \text{A}$, $\text{CH}_3\text{COOH} \Rightarrow \text{B}$
(4) $\text{CH}_3\text{COOH} \Rightarrow \text{A}$, $\text{CH}_3\text{COOH} \Rightarrow \text{B}$

85. Anisole can be prepared by the action of methyl iodide on sodium phenate. The reaction is called-

- (1) Fittig reaction (2) Etard reaction
(3) Wurtz reaction (4) Williamson synthesis

Chemistry - 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.

86. Mixture of volatile component A and B has total vapour pressure (in torr)

$$P = 254 - 119 X_A$$

Where X_A is mole fraction of A in the mixture.

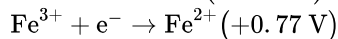
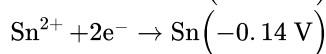
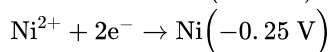
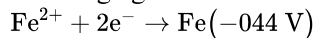
Hence, P_A° & P_B° (in torr) are-

- (1) 254, 199 (2) 119, 254
(3) 135, 254 (4) 119, 373

87. An acidic buffer is obtained on mixing-

- (1) 100 mL of 0.1 M NaOH and 200 mL of 0.1 M CH_3COOH
(2) 100 mL of 0.1 M HCl and 200 mL of 0.1 M NaCl
(3) 100 mL of 0.1 M CH_3COOH and 100 mL of 0.1 M NaOH
(4) 100 mL of 0.1 M CH_3COOH and 200 mL of 0.1 M NaOH

88. Which one among the following is the strongest reducing agent?



- (1) Fe (2) Fe^{2+}
(3) Ni (4) Sn

89. Unit of K for the rate law $r = K[A][B]^{0.5}$ are-

- (1) $\text{mol}^{1/2}\text{L}^{-1/2}\text{s}^{-1}$ (2) $\text{mol}^{-1/2}\text{L}^{1/2}\text{s}^{-1}$
(3) $\text{mol}^{-1/2}\text{L}^{-1/2}\text{s}^{-1}$ (4) $\text{mol}^{1/2}\text{L}^{1/2}\text{s}^{-1}$

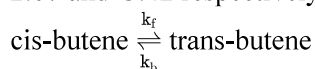
90. A crystalline solid is made of two elements A and B. Anion B are arranged in ccp lattice and cations A occupy half of octahedral and half of tetrahedral void simplest formula of the solid is-

- (1) AB (2) A_3B_2
(3) A_3B_4 (4) A_2B_3

91. The de-Broglie's wavelength of electron present in first Bohr' orbit of 'H' atom is-

- (1) $\frac{0.529}{2\pi} \text{ \AA}$ (2) $2\pi \times 0.529 \text{ \AA}$
(3) 0.529 \AA (4) $4 \times 0.529 \text{ \AA}$

92. The equilibrium constant of the following isomerisation reaction at 400 K and 298 K are 2.07 and 3.42 respectively.

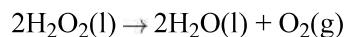


Which of the following is/are correct?

- I. The reaction is exothermic
II. The reaction is endothermic
III. At 400 K 50% of cis-butene and 50% of trans-butene are present at equilibrium
IV. Both at 298 K and 400 K, $k_f = k_b$

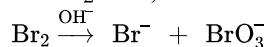
- (1) I and IV (2) II and IV
(3) I and III (4) I only

93. If ΔH_f° for H_2O_2 and H_2O are -188 kJ/mole and -286 kJ/mole , what will be the enthalpy change of the reaction?



- (1) -196 kJ/mol (2) -494 kJ/mol
(3) 146 kJ/mol (4) -98 kJ/mol

94. Equivalent weight of Br_2 when its disproportionated according to the reaction (mol. wt. $\text{Br}_2 = M$)-



- (1) $\frac{M}{5}$ (2) $\frac{M}{2}$
(3) $\frac{M}{10}$ (4) $\frac{3M}{5}$

95. Amongst the alkali metal hydrides, the thermally most stable one is-

- (1) LiH (2) NaH
(3) KH (4) RbH

96. Mg is an important component of which biomolecule occurring extensively in living world ?

- (1) Hemoglobin (2) Chlorophyll
(3) Florigen (4) ATP

97. In the refining of copper, pure copper is deposited on-

- (1) Anode (2) Cathode
(3) (A) & (B) both (4) None of these

98. Select the correct order of hydration energy of ions-

- (1) $\text{Li}^+ > \text{Na}^+ > \text{K}^+$
(2) $\text{Li}^+ > \text{K}^+ > \text{Na}^+$
(3) $\text{Cs}^+ > \text{Rb}^+ > \text{K}^+$
(4) $\text{Li}^+ > \text{Cs}^+ > \text{K}^+$

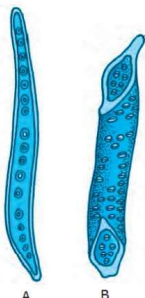
99. Bakelite is :

- (1) A condensation polymer (2) A thermosetting polymer
(3) A copolymer (4) All

Botany - Section A

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

101.What is true for the structures marked as A and B?



- (1) A is evolutionarily more advanced than B
- (2) A possess pits but B lack pit formation
- (3) A is devoid of protoplasm whereas B posses it
- (4) A transports water and minerals and B also transports water and minerals

102.In higher plants & animals, growth & reproduction are linked but are -

- (1) Mutually exclusive events
- (2) Mutually inclusive events
- (3) Mutually inclusive events along with monerans
- (4) Mutually exclusive events along with protistans

103.In a taxonomy hierarchy, the family is placed between

- (1) Kingdom and class
- (2) Class and order
- (3) Order and genus
- (4) Class and genus

104.Metabolism is exhibited by :

- (1) All plants
- (2) All animals
- (3) Fungi & Microbes
- (4) All of these

105.Given below is the botanical name of mango. Mark the option in which the name is correctly written.

- (1) Megnifera Indica
- (2) Mngifera indica
- (3) mangifera Indica
- (4) Mangifera indica

106.Largest botanical garden of Asia is ____ situated in ____

- (1) NBG, Lucknow
- (2) IBG, Kolkata
- (3) RBG, London
- (4) MBG, Moscow

107.Botanical gardens and zoological parks have-

- (1) collection of endemic living species only
- (2) collection of exotic living species only
- (3) collection of endemic and exotic living species
- (4) collection of only local plants and animals.

108.Which of the following statements is **wrong** for viroids?

- (1) They lack a protein coat
- (2) They are smaller than viruses
- (3) They cause infections
- (4) Their RNA is of high molecular weight

109.Functional megaspore in an angiosperm develops into?

- (1) Endosperm
- (2) Embryo sac
- (3) Embryo
- (4) Ovule

110.An ovule has generally how many embryo sac ?

- (1) 1
- (2) 3
- (3) 4
- (4) 8

111.When the temperature of soil becomes 1° C then?

- (1) Absorption of water increases
- (2) Absorption of water decreases
- (3) Absorption of water remains unaffected
- (4) Both (B) and (C) are correct

112.Upward movement of water through xylem is best explained by :-

- (1) Cohesion
- (2) Pulsation
- (3) Capillary
- (4) Root pressure

113. Photosynthetically active radiation (PAR) represents the following range of wavelength.

- (1) 400 – 700 nm (2) 500 – 600
(3) 450 – 950 (4) 340 – 450 nm

114. How many ATP and NADPH₂ are respectively produced in the process of photorespiration ?

- (1) 2 and 4 (2) 1 and 2
(3) 4 and 6 (4) 0 and 0

115. Identify the non-leguminous plant that forms nodules to fix nitrogen :-

- (1) Alnus (2) Pinus
(3) Cycas (4) None of these

116. Select the incorrectly matched pair :-

- (1) End products of alcoholic fermentation - Ethanol + CO₂
(2) End products of lactic acid fermentation - Lactic acid + CO₂
(3) Obligate anaerobe - Clostridium tetani
(4) RQ of carbohydrates - One

117. Which of the following is a 4-carbon compound ?

- (1) Oxaloacetic acid (2) Phosphoglyceric acid
(3) Ribulose bisphosphate (4) Phosphoenolpyruvate

118. Functions of auxins include :-

- (1) Promoting flowering in pineapple
(2) Inducing parthenocarpy in tomato
(3) Use as herbicides to kill dicot weeds
(4) All of these

119. Warm blooded animals like mammals from colder climates generally have shorter ear and limbs. This is an explanation of -

- (1) Jordan's rule (2) Allen's rule
(3) Rensch's rule (4) Bergman's rule

120. Which of the following is correct for r-selected species?

- (1) Large number of progeny with small size
(2) Large number of progeny with large size
(3) Small number of progeny with small size
(4) Small number of progeny with large size

121. In an aquatic ecosystem, the organism present at the trophic level equivalent to cows in grasslands is

- (1) Phytoplanktons (2) Large fishes
(3) Sea gulls (4) Zooplanktons.

122. Tree → Birds → Parasite

Pyramid of biomass of the above given food chain is

- (1) Urn shape (2) Inverted
(3) Upright (4) Spindle shaped

123. Match the column I with column II

Column I	Column II
a. Thylacine	(i) Russia
b. Dodo	(ii) Mauritius
c. Quagga	(iii) Australia
d. Steller's sea cow	(iv) Africa

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

124. Acid precipitation refers to rain, snow, fog with a lower pH. This results primarily due to the presence of which of the following components in the atmosphere

- (1) Co and CO₂
(2) SO₂ and NO₂
(3) Hydrocarbons and O₃
(4) Lead and Phosphorous Oxide

125. In an aquatic ecosystem, maximum toxicity due to biomagnification will be seen in :

- (1) Phytoplanktons (2) Zooplanktons
(3) Large fishes (4) Fish eating birds

126. Read the following statements :

- (i) Stem develops from the plumule of a spore
- (ii) Stem bears nodes and internodes
- (iii) The region of stem where leaves are born are called internodes
- (iv) The stem bears terminal or axillary buds
- (v) Some stems perform the function of storage of food, support, protection and of vegetative propagation.

How many of the above statements are correct ?

- (1) Three
- (2) Two
- (3) Four
- (4) Five

127. The margins of sepals or petals overlap one another but not in any particular direction in the flowers of :

- (1) Cassia and gulmohar
- (2) China rose and cotton
- (3) Calotropis
- (4) Calotropis and lady's finger

128. Choose the incorrect statement :

- (1) Permanent tissues having all cells similar in structure and function are called simple tissue
- (2) Complex tissue has different types of cells performing different functions altogether
- (3) Secondary meristem is lateral meristem
- (4) The cells of permanent tissues do not generally divide further

129. In F_2 - generation of a monohybrid cross what is the ratio of homozygous and heterozygous-

- (1) 1 : 2
- (2) 3 : 1
- (3) 1 : 1
- (4) 1 : 1 : 1 : 1

130. A gene producing multiple effect is called -

- (1) Pleiotropic gene
- (2) Split gene
- (3) Complementary gene
- (4) Supplementary gene

131. Mendelian recombinations are due to :-

- (1) Mutation
- (2) Crossing over
- (3) Independent assortment
- (4) Hybridization

132. Find the incorrect match with respect to single cell protein

- (1) BGA : Spirulina
- (2) Fungi : Fusarium
- (3) Bacteria : Candida
- (4) Bacteria : Methylophilus

133. In process of replication deoxyribonucleoside triphosphate-

- (1) Acting as substrate
- (2) Providing energy for polymerisation reaction
- (3) Acting as an enzyme
- (4) Both (1) & (2)

134. In eukaryote RNA polymerase-I does not catalyze the formation of :-

- (1) 28 s rRNA
- (2) 5.8 s rRNA
- (3) 18s rRNA
- (4) 5s rRNA

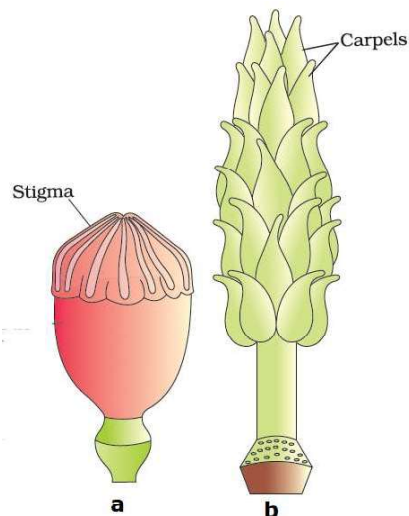
135. Genetic code of m-RNA is translated from :-

- (1) 5'-3' direction
- (2) 3'-5' direction
- (3) Any direction
- (4) None

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. The given figure a and b show female reproductive organs of Papaver and Michelia respectively -



- (1) a-Multicarpellary syncarpous pistil and b-Multicarpellary apocarpous pistil
(2) a-Multicarpellary apocarpous pistil b-Multicarpellary syncarpous pistil
(3) Both a and b are multicarpellary syncarpous pistils
(4) Both a and b are multicarpellary apocarpous pistils

137. The flower which expose their mature anther and stigma to the pollinating agent is called:-

- (1) Cleistogamy (2) Autogamy
(3) Semigamy (4) Chasmogamy

138. Carpels are fused

- (1) Gamocarpous (2) Polycarpous
(3) Apocarpous (4) Syncarpous

139. During Hatch and Slack pathway, PEP combines with CO_2 in the presence of enzyme PEPcase, to form OAA. This process of initial fixation of CO_2 occurs in :-

- (1) Mesophyll cells (2) Bundle sheath cells
(3) Both (1) and (2) (4) None of these

140. Which of the following elements cause necrosis due to their deficiency?

- (1) N, K and S (2) N, K, Mg and Fe
(3) Mn, Zn and Mo (4) Ca, Mg, Cu and K

141. Aerobic respiratory pathway is appropriately termed:

- (1) Parabolic (2) Amphibolic
(3) Anabolic (4) Catabolic

142. What percent of PAR is captured by transducers to sustain the entire living world

- (1) 1 - 5% (2) 2 - 10%
(3) 0.2 - 1% (4) 0.8 - 1.6%

143. Which of the following is not an example of in-situ conservation ?

- (1) Biosphere Reserves (2) National Parks
(3) Wildlife Sanctuaries (4) Botanical gardens

144. Identify the correct match from the following column-I, II and III :

Column-I	Column-II	Column-III
(1) Eurythermal	(a) Able to tolerate narrow range of temperature	(i) 99% animals
(2) Stenothermal	(b) A stage of suspended development	(ii) Thermoregulation
(3) Conformers	(c) Body temperature changes with ambient temperature	(iii) Zooplanktons
(4) Diapause	(d) Able to tolerate wide range of temperature	(iv) Poikilothermal

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

145. Match the columns :

Column-I	Column-II
(A) Bract	i Swollen leaf base
(B) Pulvinus	ii Calyx & Corolla are not distinct
(C) Perianth	iii Reduced leaf
(D) Petiole	iv Leaf stalk

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

146. Read the following statements:

- (i) The sieve tube elements and companion cells are connected by pit fields present between their common longitudinal walls
 (ii) Phloem parenchyma is made of parenchymatous cells
 (iii) Phloem fibres are made of parenchymatous cells
 (iv) Companion cells help in maintaining the pressure gradient in the sieve tube
 (v) The Phloem parenchyma stores food material and other substances like resins, latex and mucilage

How many of the above statements are correct?

- (1) Three (2) Two
 (3) One (4) Four

147. Wild type *Escherichia coli* growing on medium having glucose is transferred to lactose containing medium. Which one of the following change will occur ?

- (1) The bacterium stops dividing
 (2) All operon are induced
 (3) Lac operon is suppressed
 (4) Lac operon is induced

148. Which of the given statement is correct in the context of observing DNA separated by agarose gel electrophoresis?

- (1) DNA can be seen in visible light
 (2) DNA can be seen without staining in visible light
 (3) Ethidium bromide stained DNA can be seen in visible light
 (4) Ethidium bromide stained DNA can be seen under exposure to UV light

149. Black colour of pupil (B) is dominant over brown pupil (b). Sunita father has black pupil but her mother is brown pupil but Sunita have brown pupil then what is the genotype of Sunita's father :-

- (1) BB (2) Bb
 (3) bb (4) Any of above

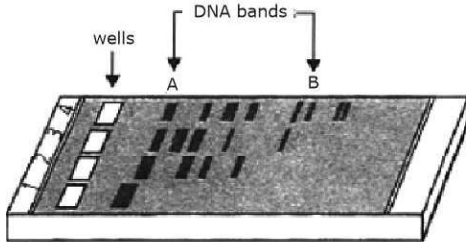
150. Ram has hairy ears (hypertrichosis), a trait carried by a gene in his Y-chromosome. What is the chance that his grandson will inherit the trait from him

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

Zoology -Section A

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

151. Study the given figure carefully and select the incorrect statement regarding this.



- (i) It represents a typical agarose gel electrophoresis in which lane 1 contains undigested DNA.
- (ii) Smallest DNA bands are formed at A and largest DNA bands are formed at B.
- (iii) The separated DNA fragments can be visualized after staining in the visible light.
- (iv) The separated DNA bands are cut out from the agarose gel and extracted from the gel piece. This step is known as elution.

- (1) (i) and (ii) (2) (ii) and (iii)
- (3) (ii) and (iv) (4) (i) and (iv)

152. Match the following columns and select the correct option. **(a) (b) (c) (d)**

Column-I	Column-II
(a) Pituitary gland	(i) Grave's disease
(b) Thyroid gland	(ii) Diabetes mellitus
(c) Adrenal gland	(iii) Diabetes insipidus
(d) Pancreas	(iv) Addison's disease

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

153. The ratio of H₂, NH₃ and CH₄ in Miller's experiment was (respectively) :-

- (1) 1 : 2 : 2 (2) 2 : 1 : 2
- (3) 1 : 1 : 2 (4) 2 : 2 : 1

154. Variation (change) in the size, shape, colour or structure, of an animal or in its parts are due to

- (1) Meristic variations (2) Blastogenic variation
- (3) Continuous variations (4) Saltations

155. Which of the following reproductive barriers actually prevents individual of different species from mating with each other ?

- (1) Gametic isolation (2) Hybrid sterility
- (3) Behavioural isolation (4) Hybrid inviability

156. Which of the following is true for Homo sapiens?

- (1) Protruded mouth
- (2) Cranial capacity of 1450 cc
- (3) Omnivorous
- (4) More than one is correct

157. Infertility in cattle can be overcome by the use of-

- (1) Pregnant - mare serum gonadotropin
- (2) Pregnant - mule serum gonadotropin
- (3) Pregnant henny serum gonadotropin
- (4) Pregnant goat serum gonadotropin

158. The type of egg in cockroach is called-

- (1) Isolecithal (2) Centrolecithal
- (3) Microlecithal (4) Telolecithal

159.The connective tissue of the vertebrate body is built up from fibres of the protein collagen, embedded in a polysaccharide matrix to form :

- (1) Cartilage (2) Blood vessel
(3) Heart (4) Lung

160.Mucous is secreted by :-

- (1) Oxyntic cells (2) Goblet cells
(3) Liver (4) Pancreas

161.In jaundice, skin and eyes turn yellow due to the deposition of bile pigments, This disease is due to malfunctioning of which organ?

- (1) Liver (2) Intestine
(3) Brain (4) Pancreas

162.HCl is secreted by

- (1) Zymogen cells (2) Oxyntic cells
(3) Kuffer cells (4) Mucous cells

163.Which type of substance is detected in dope test ?

- (1) Dextrin (2) Steroid
(3) Interferon (4) Insulin

164.Yield of Paddy field can be increased by application of

- (1) Archaeobacteria (2) Nostoc/Anabaena
(3) Symbiotic bacteria (4) None of them

165.In pBR 322, tetracyclin resistance gene (tet^r) has recognition site for which of the following restriction endonuclease?

- (1) Hind III (2) Bam HI
(3) Eco RI (4) Pst I

166.Significance of 'heat shock' method in bacterial transformation is to facilitate

- (1) binding of DNA to the cell wall
(2) uptake of DNA through membrane transport proteins
(3) uptake of DNA through transient pores in the bacterial cell wall
(4) expression of antibiotic resistance gene

167.Transgenic crop developed to tolerate herbicides is

- (1) Sunflower (2) Tomato
(3) Tobacco (4) Both 2 and 3

168.Production of a human protein in bacteria by genetic engineering is possible because

- (1) Bacterial cell can carry out the RNA splicing reactions
(2) The mechanism of gene regulation is identical in humans and bacteria
(3) The human chromosome can replicate in bacterial cell
(4) The genetic code is universal

169.Which statement is correct:-

- (1) Endocytosis takes place in the endoplasmic reticulum
(2) During the process of endocytosis, particles enter the cytoplasm through a pore in the plasma membrane
(3) During the process of endocytosis the plasma membrane increase in surface area
(4) All of these

170.Which of the face of Golgi complex is associated with E.R

- (1) Forming face or cis-face
(2) Maturing face or M face
(3) Both Maturing and forming face
(4) None

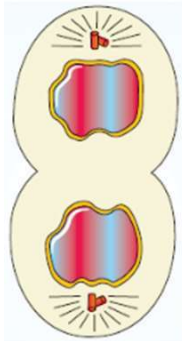
171.What are those structures that appear as 'beads-on-string' in the chromosomes when viewed under electron microscope ?

- (1) Nucleotides (2) Nucleosomes
(3) Base pairs (4) Genes

172.Stage where chromosome division occurs.

- (1) Anaphase (2) S— phase
(3) G₂ phase (4) G₀ phase

173. A stage in cell division is shown in the figure. Select the answer which gives correct identification of the stage with its characteristics?



- (1) Telophase — Endoplasmic reticulum and nucleolus not reformed yet
 (2) Telophase — Nuclear envelope reforms, Golgi complex reforms
 (3) Late anaphase — Chromosomes move away from equatorial plate, Golgi complex not present
 (4) Cytokinesis — Cell plate formed, mitochondria distributed between two daughter cells
174. Which one of the following options gives the **correct** categorisation of six animals according to the type of nitrogenous wastes they give out ?
- (1) Ammonotelic - Aquatic Amphibia, Ureotelic - Frog, Humans, Uricotelic - Pigeon, Lizards, Cockroach
 (2) Ammonotelic - Aquatic Amphibia, Ureotelic - Cockroach, Humans, Uricotelic - Frog, Pigeon Lizards
 (3) Ammonotelic - Pigeon, Humans, Ureotelic - Aquatic Amphibia, Lizards, Uricotelic - Cockroach, Frog
 (4) Ammonotelic - Frog, Lizards, Ureotelic - Aquatic Amphibia, Humans, Uricotelic - Cockroach, Pigeon

175. In our kidneys the cortex extends in between the medullary pyramids and is called:
- (1) Calyx (2) Columns of Bertini
 (3) Renal pelvis (4) Bowman's capsule

176. Grave's disease is caused by :

- (1) Hyposecretion of thyroxine hormone
 (2) Hyposecretion of adrenal cortex hormones
 (3) Enlargement of thyroid gland
 (4) hypersecretion of growth hormone

177. Total volume of air that a person can inspire after normal expiration is represented as

- (1) Tidal volume
 (2) Vital capacity
 (3) Inspiratory capacity
 (4) Expiratory reserve volume

178. Select the correct events that occur during inspiration.

- (a) Contraction of diaphragm
 (b) Contraction of external inter costal muscles
 (c) Pulmonary volume decreases
 (d) Intra pulmonary pressure increases
- (1) (a), (b) and (d) (2) Only (d)
 (3) (a) and (b) (4) (c) and (d)

179. Which among these is **not** a homeotherm?

- (1) Aptenodytes (2) Testudo
 (3) Balaenoptera (4) Neophron

180. Which of the following is **not** correctly matched:

- (1) **Mammalia** – Dolphin, Flying fox
 (2) **Pisces** – Cuttle fish, Jelly fish
 (3) **Mollusca** – Devil fish, Sea squid
 (4) **Echinodermata** – Sea urchin, Brittle star

181. Which of the following is **not** a function of water canal system of porifera?

- (1) Food gathering (2) Respiratory exchange
 (3) Removal of waste (4) Attachment

190.In nocturnal animals which one of the following is correct :-

- (1) Retina contains only cones
(2) Adjustable pupil
(3) Deficiency of vitamin A
(4) Retina contains only rods

191.Identify the correct matched pair :-

- (1) Tetrad visibility in meiosis – zygotene
(2) Terminalization in meiosis – pachytene
(3) Chiasmata appearance – Pachytene
(4) Disjunction – Anaphase-I

192.The principle protein of cilia and flagella is-

- (1) Nexin
(2) Basal body
(3) Tubulin
(4) Albumin

193.Transgenic animals are produced for which of the following purposes ?

- I. To study-how gene are regulated and how they affect the normal functions of body and its development
II. To study of diseases
III. To obtain useful biological product
IV. To test vaccine safety and chemical safety

- (1) All
(2) I and IV
(3) II and IV
(4) Only I

194.Fraternal twins in man are produced when

- (1) Two sperms fertilize an ovum and the first two blastomeres separate from each other
(2) One sperm fertilizes an ovum and first two blastomeres separate from each other
(3) Egg develops parthenogenetically and first two blastomeres separate from each other
(4) Two ova are fertilized simultaneously

195.Which one of the following statements is **true**?

- (1) Head of humerus bone articulates with acetabulum of pectoral girdle.
(2) Head of humerus bone articulates with glenoid cavity of pectoral girdle.
(3) Head of humerus bone articulates with a cavity called acetabulum of pelvic girdle.
(4) Head of humerus bone articulates with a glenoid cavity of pelvic girdle

196.Arrange the following events of **muscle contraction** in the sequence

- (i) Generate an action potential in the sarcolemma
(ii) Form a cross bridge
(iii) Release a neurotransmitter (Acetylcholine)
(iv) Release of calcium ions
(v) Pulls the attached actin filaments towards the centre of "A" band
(vi) Remove the masking of active sites for myosin

The correct option is :

- (1) iii → i → iv → ii → v → vi
(2) iii → iv → i → ii → vi → v
(3) i → ii → iii → iv → v → vi
(4) iii → i → iv → vi → ii → v

197.Which of the following components does not participate in innate immunity?

- (1) Neutrophils
(2) Macrophages
(3) B-lymphocytes
(4) Natural killer cells

198.Which of the following sets includes bacterial diseases?

- (1) Tetanus, tuberculosis, Amoebiasis
(2) Diphtheria, typhoid, plague
(3) Cholera, typhoid, mumps
(4) Malaria, mumps, polio

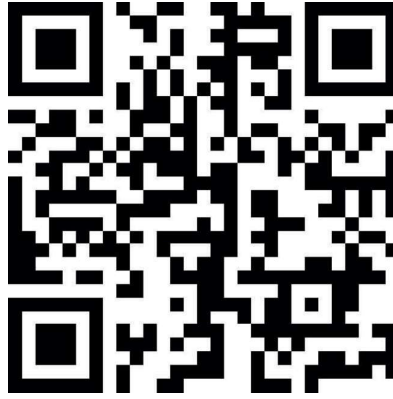
199.Which of the following human parasites require mosquito to complete their life cycle?

- (1) *Ascaris lumbricoides* and *Wuchereria bancrofti*
(2) *Ascaris lumbricoides* and *Leishmania donovani*
(3) *Entamoeba histolytica* and *Plasmodium ovale*
(4) *Plasmodium ovale* and *Wuchereria bancrofti*

200.Which of the following drug is extracted from the latex of poppy plant *Papaver somniferum*, generally taken by snorting and injection is a depress and slows down body functions?

- (1) Cocaine
(2) Hashish
(3) Barbiturate
(4) Heroin

STEPS TO APPEAR FOR THE TEST & GET RESULTS



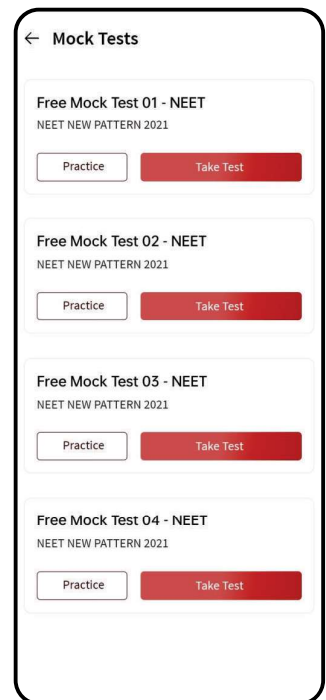
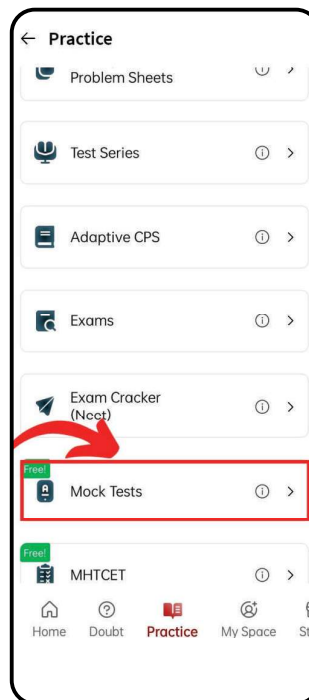
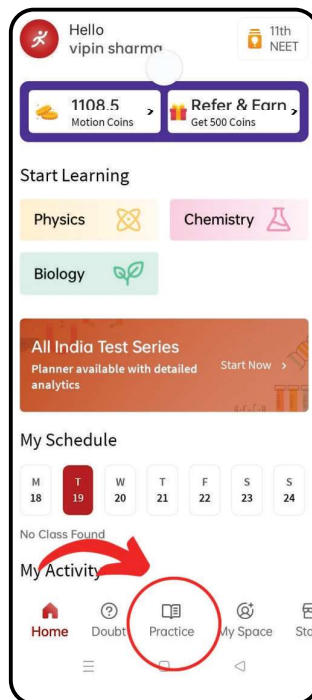
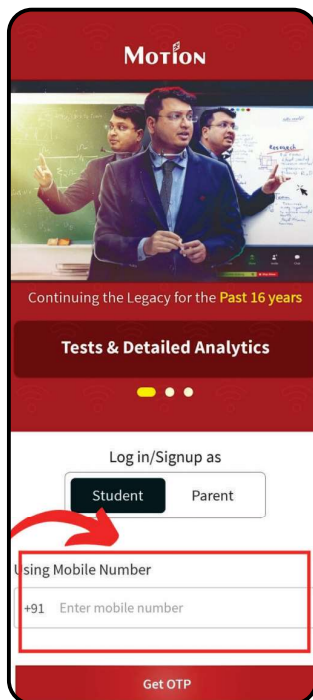
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