Medical - UG

Time : 3 Hrs.
Marks : 720

NEET - II : 2016
CODE -AA/PP/WW
PHYSICS

Date : 24-07-2016

1. $$\frac{\sqrt{hG}}{\left(\sqrt{C}\right)^3}=\sqrt{\frac{L^5T^{-3}}{L^3T^{-3}}}=\sqrt{L^2}=L$$

Topic: Dimension ; Sub Topic: Units ; L:1 ; Medical-UG ; NEET-II - 2016

2. $$\frac{dx_p}{dt}=a+2bt$$

$$\frac{dx_q}{dt}=f-2t$$

$$a+2bt=f-2t$$

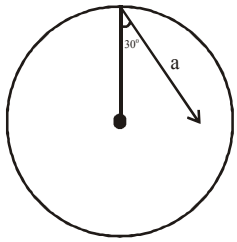
$$t=\frac{f-a}{(2b+2)}$$

Topic:Kinematics ; Sub Topic: Velocity ; L:1 ; Medical-UG ; NEET-II - 2016

3. $$\frac{a_t}{a_r}=\tan\left(30^0\right)=\frac{1}{\sqrt{3}}$$

$$\sqrt{a_t^2+a_r^2}=15 \qquad a_r\left(\sqrt{4/3}\right)=15$$

$$\sqrt{\left(\frac{a_r}{\sqrt{3}}\right)^2+a_r^2}=15$$

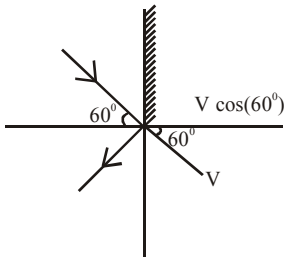


$$a_r\left(\sqrt{3}\right)=15$$

$$a_r=15\sqrt{\frac{3}{4}}=\frac{v^2}{r}$$

$$v=\sqrt{15\times2.5\sqrt{\frac{3}{4}}}=5.7m/s$$

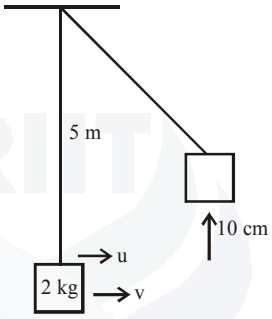
Topic: Circular Motion ; Sub Topic: Acceleration ; L:2 ; Medical-UG ; NEET-II - 2016

4. 

$$I = \Delta P$$
$$= m\left(2V\cos(60)\right)$$
$$= mv$$

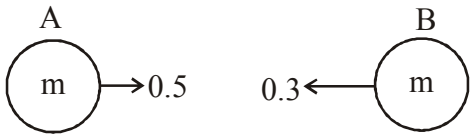
Topic:System of Particle ; Sub Topic: Momentum ; L:1 ; Medical-UG ; NEET-II - 2016

5. $$2\times g0.1 = \frac{1}{2}2u^2$$



$$4 = \sqrt{2}$$
$$p_i = p_f$$
$$0.01\times 400 = 0.01V + 2\times\sqrt{2}$$
$$\frac{4-\sqrt{2}}{0.01} = V = \left(4-2\times 1.4\right)100$$
$$= \left(4-2.8\right)\times 100$$
$$= 1.2\times 100$$
$$= 120$$

Topic: System of Particle ; Sub Topic: Momentum ; L:1 ; Medical-UG ; NEET-II - 2016

6. 

Velocity exchange due to same mass.

Topic: System of Particle ; Sub Topic: Collision ; L:1 ; Medical-UG ; NEET-II - 2016

7. $$\vec{D} = Displacement = \left(4i + 3\hat{k}\right) - \left(-2\hat{i} + 5\hat{j}\right)$$
$$= 2\hat{i} - \hat{j} + 3\hat{k}$$

Work $= \vec{F}\cdot\vec{D}$

$$= \left(4\hat{i} + 3\hat{j}\right)\cdot\left(2\hat{i} - \hat{j} + 3\hat{k}\right)$$
$$8 - 3 = 5$$

Topic:Work Power Energy ; Sub Topic: Power ; L: 1 ; Medical-UG ; NEET-II - 2016

8. $\frac{1}{2}I_A\omega_A^2 = \frac{1}{2}I_B\omega_2^2$

$$\frac{(I_A\omega_A)^2}{I_A} = \frac{(I_B\omega_B)^2}{I_B}$$

$$\left(\frac{L_A}{L_B}\right)^2 = \frac{I_A}{I_B}$$

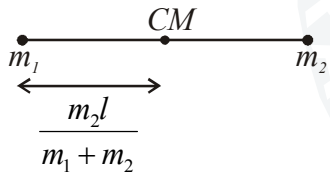
$\because I_B > I_A \Rightarrow L_B > L_A$

Topic:Rotation ; Sub Topic: Angular Momentum ; L:2 ; Medical-UG ; NEET-II - 2016

9. $$\frac{E_S}{E_C} = \frac{\frac{1}{2}I_S\omega_S^2}{\frac{1}{2}I_C\omega_C^2} = \frac{\frac{2}{5}MR^2\omega_S^2}{\frac{MR^2}{2}\omega_C^2}$$

$$= \frac{4}{5}\frac{1}{2^2} = \frac{1}{5}$$

Topic:Rotation ; Sub Topic: Energy ; L:1 ; Medical-UG ; NEET-II - 2016

10. 

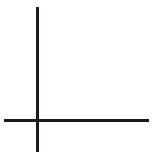
$$I = m_1\left(\frac{m_2 l}{m_1 + m_2}\right)^2 + m_2\left(\frac{m_1 l}{m_1 + m_2}\right)^2$$

$$= \frac{m_1 m_2 l^2}{(m_1 + m_2)^2}[m_1 + m_2]$$

$$= \frac{m_1 m_2}{m_1 + m_2} l^2$$

Topic: Rotation ; Sub Topic: Inertia ; L:2 ; Medical-UG ; NEET-II - 2016

11. $g = \frac{GMr}{R^3}$ $\quad r \le R$



$\frac{GM}{r^2}$ $\quad r > R$

Topic: Gravitation ; Sub Topic: Gravity ; L: 1 ; Medical-UG ; NEET-II - 2016

12. $Total\ energy = -\dfrac{GMm}{2(R+h)}$

$$= -\frac{GM}{2R^2}\frac{R^2 m}{(R+h)}$$

$$= -\frac{g_0 m R^2}{2(R+h)}$$

Topic:Gravitation ; Sub Topic: Energy ; L:1 ; Medical-UG ; NEET-II - 2016

13. $\dfrac{\Delta P_0 E}{Area} = S \Rightarrow \dfrac{3\times10^{-4}}{2(20-8)\times10^{-4}} = \dfrac{3}{24} = \dfrac{1}{8} = 0.125$

Topic: Properties of Matter ; Sub Topic: Surface Tension ; L:1 ; Medical-UG ; NEET-II - 2016

14. $h = \dfrac{2s\cos\theta}{frg}$

$$\frac{\cos(\theta)}{\rho} = \text{constant}$$

$$\Rightarrow \frac{\cos(\theta_1)}{\rho_1} = \frac{\cos(\theta_2)}{\rho_2} = \frac{\cos(\theta_3)}{\rho_3}$$

$\rho_1 > \rho_2 > \rho_3$

$\cos(\theta_1) > (\cos\theta_2) > (\cos\theta_3)$

$\theta_1 < \theta_2 < \theta_3$

Rise means $\theta < 90^0$

Topic:Properties of Matter ; Sub Topic: Contact Angle ; L:2 ; Medical-UG ; NEET-II - 2016

15. $For\ 50^0 C$

$\Delta\theta_R(\text{released}) = mC_{100}\Delta T$

$\Delta\theta_{\text{gain}} = mC_0\Delta T$

$\because C_{100} > C_0$

$\Delta\theta_R > \Delta\theta_{gain} \Rightarrow T > 50^0 C$

Topic: Heat & Thermodynamics ; Sub Topic: Callorimetry ; L:2 ; Medical-UG ; NEET-II - 2016

16. $\frac{3T-2T}{10}=-C\left(\frac{3T+2T}{2}-T\right)....(1)$

$\frac{2T-T'}{10}=-C\left(\frac{T'+2T}{2}-T\right)....(2)$

$\frac{(2)}{(1)}=\frac{2T-T'}{3T-2T}=\frac{T'/2}{3T/2}$

$3(2T-T')=T'$

$6T=4T'$

$T'=\frac{6T}{4}=\frac{3T}{2}$

Topic: Heat & Thermodynamics ; Sub Topic: Newton's Law ; L:2 ; Medical-UG ; NEET-II - 2016

17. $PV^3=C\Rightarrow K=3$

$C=C_0+\frac{R}{1-K}$

$=\frac{3}{2}R+\frac{R}{1-3}=\frac{3R}{2}-\frac{R}{2}$

$=\mathrm{R}$

Topic: Heat & Thermodynamics ; Sub Topic: Specific Heat Capacity ; L:2 ; Medical-UG ; NEET-II - 2016

18. Heat delivered $=\theta_1$

Energy consumed $=W$

$\therefore\frac{\theta_1}{W}=\frac{\theta_1}{\theta_1-\theta_2}=\frac{1}{1-\frac{\theta_2}{\theta_1}}=\frac{1}{1-\frac{t_2+273}{t_1+273}}$

$=\frac{t_1+273}{t_1-t_2}$

Topic: Heat & Thermodynamics ; Sub Topic: Refrigerator ; L:1 ; Medical-UG ; NEET-II - 2016

19. $PV=nRT$

$P=\frac{\rho RT}{M}=\frac{\rho kN_AT}{mN_A}$

$P=\frac{\rho kT}{m}$

$\rho=\frac{mP}{kT}$

Topic: Heat & Thermodynamics ; Sub Topic: Gas Law ; L:1 ; Medical-UG ; NEET-II - 2016

20. $T = 2\pi\sqrt{\frac{m}{k}} \quad T \propto \sqrt{m}$

$$\frac{3}{5} = \frac{\sqrt{m}}{\sqrt{m+1}}$$

$$9m+9 = 25m \quad \frac{9}{25} = \frac{m}{m+1}$$

$$9 = 16m$$

$$m = \frac{9}{16}$$

Topic: SHM ; Sub Topic: Type Period ; L: 1 ; Medical-UG ; NEET-II - 2016

21. $$\frac{3V}{2L_0} = \frac{3V}{4L_C}$$

$$L_0 = 2L$$

Topic: Sound Wave ; Sub Topic: Standing Wave ; L:1 ; Medical-UG ; NEET-II - 2016

22. $y_1 = A\sin(2\pi nt)$

$y_2 = A\sin(2\pi(n-1)t)$

$y_3 = A\sin(2\pi(n+1)t)$

$y = 2\sin(2\pi nt)\cos(2\pi t) + A\sin(2\pi nt)$

$= A(1+2\cos(2\pi t))\sin(2\pi nt)$

$\Rightarrow \cos(2\pi t) = \pm 1$

$2\pi t = n\pi$

$t = n$

$t = 0, \frac{1}{2}, 1, \frac{3}{2}....$

so time interval $= \frac{1}{2}s$

Topic: Sound Wave ; Sub Topic: Beats ; L:2 ; Medical-UG ; NEET-II - 2016

23. $\vec{\tau} = PE\sin(\theta)$

$$4 = q(0.02)\times 2\times 10^3 \times \sin(30^0)$$

$$q = \frac{4}{2\times 10} = 0.2$$

$$q = 2\,mC$$

Topic:Electrostatics ; Sub Topic: Dippole ; L:1 ; Medical-UG ; NEET-II - 2016

24. $\frac{2}{3}\frac{\varepsilon_0 A}{d}\left(K_1+K_2+K_3\right)=C_1$

$\left(k_1,k_2,k_3 \text{ are parallel}\right)$

$$\frac{\frac{\varepsilon_0 A}{d}}{2}K_4=C_2$$

$$\frac{1}{C}=\frac{1}{C_1}+\frac{1}{C_2}$$

$$\frac{d}{\varepsilon_0 AK}=\frac{3d}{2\varepsilon_0 A\left(K_1+K_2+K_3\right)}+\frac{d}{2\varepsilon_0 AK_4}$$

$$\frac{1}{K}=\frac{3}{z\left(K_1+K_2+K_3\right)}+\frac{1}{2K_4}$$

Topic:Capacitance ; Sub Topic: Dielectric ; L:2 ; Medical-UG ; NEET-II - 2016

25. $1\times 2+3+2\times 2=9V$

Topic:Current Electricity ; Sub Topic: Potential Difference ; L:1 ; Medical-UG ; NEET-II - 2016

26. $P=\frac{V^2}{R}$ $\quad\therefore\ 500=\frac{100^2}{R_b}$

$\therefore\ R_b=20\ \Omega$

$$\therefore\quad I=\frac{230}{20+R}$$

$$\therefore\quad 500=I^2 20$$

$$500=\left(\frac{230}{20+R}\right)^2 20$$

$$\therefore\quad 25=\left(\frac{230}{20+R}\right)^2$$

$$\therefore\quad \frac{230}{20+R}=5$$

$$\therefore\quad 46=20+R$$

$$\therefore\quad R=26\Omega$$

Topic:Current Electricity ; Sub Topic: Power ; L:2 ; Medical-UG ; NEET-II - 2016

27. $\frac{\ell}{2\pi} = R$ one turn

$$B_1 = \frac{\mu_0}{2}\ \frac{I}{R} = B$$

$$\frac{\ell}{2\pi n} = r = \frac{R}{n}$$

$$\therefore \qquad B_2 = \frac{\mu_0 nI}{2r} = \frac{\mu_0\ n\ I}{2\,{}^{R}\!/_{n}} = n^2 B$$

Topic:Magnetic Field ; Sub Topic: Field ; L:1 ; Medical-UG ; NEET-II - 2016

28. $W = -MB\cos 60^o - \left(-MB\right)$

$$W = \frac{MB}{2}$$

$$\therefore \tau = MB\sin 60^o$$

$$\tau = 2W\frac{\sqrt{3}}{2} = \sqrt{3}W$$

Topic:Magnetic Field ; Sub Topic: Magnet ; L:2 ; Medical-UG ; NEET-II - 2016

29. (1)

$$\frac{mV^2}{r} = qvB$$

$$\therefore \qquad \frac{V}{r} = \left(\frac{e}{m}\right)B$$

$$\therefore \qquad \frac{V}{2\pi r} = f = \frac{e}{m}\frac{B}{2\pi}$$

$$f = \frac{1.76\times 3.57\times 10^9}{2\times 3.14}$$

$$f = 0.98\times 10^9$$

$$\boxed{d \approx 1GHz}$$

Topic:Magnetic Field ; Sub Topic: Current ; L:1 ; Medical-UG ; NEET-II - 2016

30. For a series circuit

$$Q = \frac{1}{R}\sqrt{\frac{L}{C}}$$

$$Q_1 = \frac{1}{20}\sqrt{\frac{1.5}{35}} \times 10^3$$

$$Q_2 = \frac{1}{25}\sqrt{\frac{2.5}{45}} \times 10^3$$

$$Q_3 = \frac{1}{15}\sqrt{\frac{3.5}{30}} \times 10^3$$

$$Q_4 = \frac{1}{25}\sqrt{\frac{1.5}{45}} \times 10^3$$

3rd circuit has maximum Q value & hence best suited for tuinng.

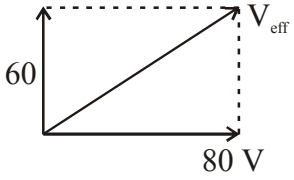
Topic:Communication ; Sub Topic: LRC ; L:1 ; Medical-UG ; NEET-II - 2016

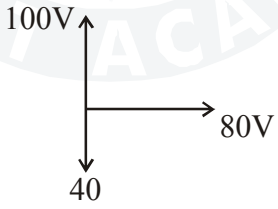
31. $\varepsilon_1 = -\pi r^2 \frac{dB}{dt}$

$\varepsilon_2 = 0$

Topic: Magnetic Field ; Sub Topic: EMI ; L:1 ; Medical-UG ; NEET-II - 2016

32. $\therefore$





$$\cos\theta = \frac{80}{\sqrt{3600+6400}} = 0.8$$

Topic: Alternating Current ; Sub Topic: Power ; L:2 ; Medical-UG ; NEET-II - 2016

33. $R_{net} = 100\sqrt{2}$

$$i_{max} = \frac{220\sqrt{2}}{100\sqrt{2}}$$

$= 2.2\,\text{A}$

Topic: Current Electricity ; Sub Topic: RC-Circuit ; L: 2 ; Medical-UG ; NEET-II - 2016

34. $\frac{1}{f}=\left(\frac{3}{2}-1\right)\left(\frac{1}{R}-\left(-\frac{1}{R}\right)\right)$

$\frac{1}{f}=\frac{1}{R}$

$\therefore \quad \frac{1}{f'}=\left(\frac{4}{3}-1\right)\left(-\frac{1}{R}-\frac{1}{R}\right)$

$=\frac{1}{3}\left(-\frac{2}{R}\right)=-\frac{2}{3R}$

$\therefore \quad \frac{1}{f_{eff}}=\frac{1}{f}+\frac{1}{f'}+\frac{1}{f}=\frac{2}{R}-\frac{2}{3R}=\frac{4}{3R}$

$\therefore \quad \boxed{f_{eff}=\frac{3f}{4}}$

Topic:Ray Optics ; Sub Topic: Lens ; L:1 ; Medical-UG ; NEET-II - 2016

35. $\therefore \quad \frac{t_1}{1.5}=5 \qquad \therefore t_1=7.5\,cm$

$\frac{t_2}{1.5}=3 \qquad t_2=4.5\,cm$

$\therefore \quad \boxed{t=12\,cm}$

Topic:Ray Optics ; Sub Topic: Refraction ; L:1 ; Medical-UG ; NEET-II - 2016

36. $\frac{I_1}{I_2}=n \qquad \therefore \frac{A_1}{A_2}=\sqrt{n}$

$\therefore \quad \frac{A_1+A_2}{A_1-A_2}=\frac{A_{\max}}{A_{\min}}=\frac{\sqrt{n}+1}{\sqrt{n}-1}$

$\therefore \quad \frac{I_{\max}}{I_{\min}}=\frac{\left(\sqrt{n}+1\right)^2}{\left(\sqrt{n}-1\right)^2}$

$\therefore \quad \boxed{\frac{I_{\max}-I_{\min}}{I_{\max}+I_{\min}}=\frac{2\sqrt{n}}{n+1}}$

Topic:Wave Optics ; Sub Topic: Interference ; L:2 ; Medical-UG ; NEET-II - 2016

37. $v = -4m$ $\quad \therefore \frac{1}{-4} - \frac{1}{\infty} = \frac{1}{d} = P$

$\therefore \quad P = -0.25$ diopter

$\therefore$ It is a concave lines.

Topic: Ray Optics ; Sub Topic: Lens ; L:2 ; Medical-UG ; NEET-II - 2016

38. $\frac{5\times10^{-5}\times10^{-2}\times0.6}{0.02\times10^{-2}}$ $\quad \frac{\lambda D}{d} = y$

15×10^{-4}

$0.15\,cm$

Topic:Wave Optics ; Sub Topic: Diffraction ; L:1 ; Medical-UG ; NEET-II - 2016

39. $\lambda = \frac{h}{mv}$ $\quad \therefore v = \frac{h}{m\lambda}$

$\therefore \quad v^2 = \frac{h^2}{m^2\lambda^2}$

$\therefore \quad \frac{1}{2} m\, v^2 = \frac{h^2}{2m\lambda^2}$

$\frac{hc}{\lambda_0} = \frac{h^2}{2m\lambda_2}$

$\therefore \quad \boxed{\lambda_0 = \frac{2m\lambda^2 C}{h}}$

Topic:Modern Physics ; Sub Topic: X-ray ; L:1 ; Medical-UG ; NEET-II - 2016

40. In first case

$E_p = 5eV$ $\quad K.E_{\max} = 2eV$

$\therefore \quad \phi = 3eV$

In second case

$K.E_{\max} = 6 - 3 = 3eV$

$\therefore \quad \boxed{\text{Stopping voltage} = -3V}$

Topic:Modern Physics ; Sub Topic: Photoelectric Effect ; L:1 ; Medical-UG ; NEET-II - 2016

41. $\frac{1}{\lambda} = (Rde)\left(\frac{1}{R^2} - \frac{1}{3^2}\right)$

$\therefore \frac{1}{\lambda} = Rd\left(\frac{5}{36}\right)$

$\therefore \frac{1}{\lambda'} = Rd\left(\frac{1}{9} - \frac{1}{16}\right) = Rd\frac{7}{9\times16}$

$\therefore \lambda' = \lambda\frac{5}{36}\times\frac{9\times15}{\times\ 7}$

$\therefore \boxed{\lambda' = \frac{\lambda 20}{7}}$

Topic:Modern Physics ; Sub Topic: Atom ; L:1 ; Medical-UG ; NEET-II - 2016

42. $t_{1/2} = 30\,\text{min}$

$\therefore \lambda = \frac{\ell n2}{30}$

$0\cdot6\,N_0 = N_0 \quad e^{-\lambda t_1}$

$9\cdot15\,N_0 = N_0 \quad e^{-\lambda t_2}$

$4 = e^{\lambda(t_2 - t_1)}$

$\therefore\ 2\ell n2 = \lambda(\Delta t)$

$\therefore \boxed{\Delta t = 60\,\text{min}}$

Topic: Modern Physics ; Sub Topic: Radioactivity ; L:2 ; Medical-UG ; NEET-II - 2016

43. $\frac{I_c}{I_\beta} = 100 \qquad R_B = 1000\,\Omega$

$\beta = 100 = \frac{I_c}{I_\beta}$

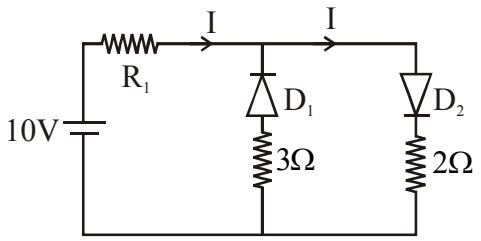
$V_0 = 4V$

$\frac{V_o}{V_i} = \beta\frac{R_L}{R_B}$

$V_i = \frac{4\times1000}{100\times2000} = 0.02 = 20mv$

Topic: Electronic Devices ; Sub Topic: Transistor ; L:2 ; Medical-UG ; NEET-II - 2016

44.

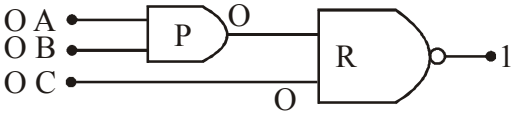


Diode D_1 is reversed biased. Then no current will flow through that link.

$$\therefore\ I = \frac{10}{4} = 2.5\,A$$

Topic: Electronic Devices ; Sub Topic: Diode ; L:1 ; Medical-UG ; NEET-II - 2016

45.



A	B	P	C	Q
O	O	O	O	1
1	1	1	1	0

Topic: Electronic Devices ; Sub Topic: Gates ; L:1 ; Medical-UG ; NEET-II - 2016

CHEMISTRY

Q.46 A long chain of glucose units attached together by 1, 4 linkages. It is the ability of these chains to hydrogen bond together in to fibres that gives cellulose its unique properties of mechanical strength and chemical stability.

Topic:Biomolecules; Sub Topic:Carbohydrates; L:2 ; Medical-UG ; NEET - II - 2016

Q.47 Molar conductivity $= k \times \dfrac{1000\ \text{cm}^3}{0.5\ \text{mole}}$

$= 5.76 \times 10^{-3}\ \text{Scm}^{-1} \dfrac{\times 1000\ \text{cm}^3}{0.5\ \text{mole}}$

$= 1.152 \times 10\ \text{Scm}^2\ \text{mol}^{-1}$

$= 11.52\ \text{Scm}^2\ \text{mol}^{-1}$

Topic:Electrochemistry; Sub Topic:Conductance and conductivity; L:1 ; Medical-UG ; NEET - II - 2016

Q.48 Unimolecular surface reactions can be described by

$A_{(g)} \underset{K_{-1}}{\overset{K_1}{\rightleftharpoons}} A_{(adsorbed)} \xrightarrow{K_2}$ products

Rate of product formation is $K_2\theta_A$ (where θ_A is surface coverage of A).

$r = K_2\theta_A$ {i.e., rate of reaction is directly proportional to surface coverage}

Topic:Surface chemistry; Sub Topic:Adsorption; L:2 ; Medical-UG ; NEET - II - 2016

Q.49 Millimoles of an electrolyte that must be added to one litre of colloidal solution to bring complete coagulation is called coagulation value.

$$\text{Coagulation power } \alpha \frac{1}{\text{Coagulation value}}$$

Topic: Surface chemistry; Sub Topic: Colloids; L:1 ; Medical-UG ; NEET - II - 2016

Q.50 $NaCl \longrightarrow Na^+ + Cl^-$ (Fused electrolyte)

Cathode : $2Na^+ + 2e \longrightarrow 2Na$

Anode : $2Cl^- \longrightarrow Cl_2 + 2e$

To get 0.1 mole $Cl_2 \Rightarrow 0.2\ F$ is required.

$0.2 \times 96500 = 3 \times t\,(\text{sec}) \Rightarrow t$ is 110 minutes (approx).

Topic: Electrochemistry; Sub Topic: Faraday's laws; L:1 ; Medical-UG ; NEET - II - 2016

Q.51 $n = 3;\ \ell = 1 \Rightarrow 3p \Rightarrow$ no. of electron $= 2$

Topic:Atomic structure ; Sub Topic:Quantum number; L:2 ; Medical-UG ; NEET - II - 2016

Q.52 $\Delta S = nC_V \ln\left(\frac{T_2}{T_1}\right) + nR\ln\left(\frac{V_2}{V_1}\right)$

$\Delta S = nC_p \ln\left(\frac{T_2}{T_1}\right) + nR\ln\left(\frac{P_1}{P_2}\right)$

Isothermal process; $T_2 = T_1$

$\Delta S = nR\ln\left(\frac{P_1}{P_2}\right)$

Topic:Thermodynamics; Sub Topic:Entropy; L:1 ; Medical-UG ; NEET - II - 2016

Q.53 $Ba(OH)_{2(s)} \rightleftharpoons Ba^{+2}_{(aq)} + 2OH^-_{(aq)}$

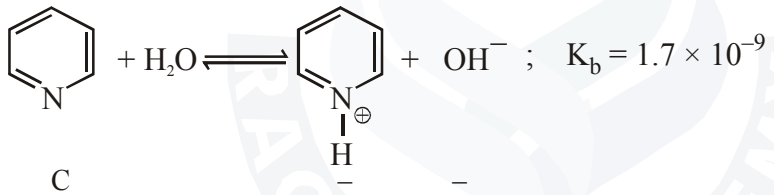
In dilution solutions; Assume complete ionisation

$\alpha = \frac{i-1}{n-1} \Rightarrow (n-1) = (i-1)$

$\therefore\ i = n = 3$

Topic:Solution and colligative properties; Sub Topic:Vant Hoff factor; L:1 ; Medical-UG ; NEET - II - 2016

Q.54



$+ H_2O \rightleftharpoons$ $+ OH^-$; $K_b = 1.7 \times 10^{-9}$

$t = 0$	C	–	–
$t = t_{eq}$	C–Cα	Cα	Cα

$\Rightarrow K_b = \frac{C\alpha^2}{1-\alpha} \Rightarrow K_b = C\alpha^2\ (1-\alpha \approx 1)$

$\Rightarrow \alpha = \sqrt{\frac{K_b}{C}} = \sqrt{\frac{1.7\times10^{-9}}{10^{-1}}} = 1.3\times10^{-4}$

% ionisation $= \alpha \times 100 = 1.3 \times 10^{-2}$

Topic:Equilibrium; Sub Topic:Ostald's dilution law; L:1 ; Medical-UG ; NEET - II - 2016

Q.55 In fluorite structure; F^- occupy tetrahedral voids and Ca^{+2} occupy CCp lattice points.

i.e., each Ca^{+2} is surrounded by 8 F^- ions $\Rightarrow$ C.N = 8

each F^- is surrounded by 4 Ca^{+2} ions $\Rightarrow$ C.N = 4

Topic:Solid Shape; Sub Topic:Ionic crystals; L:1 ; Medical-UG ; NEET - II - 2016

Q.56 E^o is – ve $\Rightarrow \boxed{\Delta G^o > 0}$

$\Delta G^o = -RT\ln K_{eq} \Rightarrow \boxed{K_{eq} > 1}$

Topic:Electrochemistry; Sub Topic: Gibbs free energy & K_{eq}; L:1 ; Medical-UG ; NEET - II - 2016

Q.57 For ideal solutions;

$\Delta G < 0;\ \ \Delta S > 0;\ \ \Delta H = 0;\ \ \Delta V = 0$

Raoult's law $\Rightarrow P_{Total} = P_A^0 X_A + P_B^0 X_B$

i.e. $P_{obs} = P_{calculated}$

$\therefore$ incorrect statement is $\Delta G_{mix} = 0$

Topic: Solution and colligative properties; Sub Topic: Ideal solutions; L:1 ; Medical-UG ; NEET - II - 2016

Q.58 $AgCl_{(s)} \rightleftharpoons Ag^+_{(aq)} + Cl^-_{(aq)}$

$K_{sp} = \left[Ag^+\right]\left[Cl^-\right]$

$1.6\times10^{-10} = \left[Ag^+\right](0.1)$

$\therefore \left[Ag^+\right] = 1.6\times10^{-9}\ M$

Topic: Ionic equilibrium; Sub Topic: Solubility product; L:1 ; Medical-UG ; NEET - II - 2016

Q.59 Let atomic weight of X be : x and Y be : y

$\therefore \quad 10 = 0.1[x+2y] \rightarrow (1)$

$9 = 0.05[3x+2y] \rightarrow (2) \Rightarrow 18 = 0.1(3x+2y)$

$\therefore \quad x + 2y = 100$

$\underline{3x + 2y = 180}$

$-2x = -80$

$\Rightarrow x = 40 \quad \Rightarrow y = 30$

Topic:Mole concept; Sub Topic:Atomic weights ; L:1 ; Medical-UG ; NEET - II - 2016

Q.60 $Q = 1\times60 = 60\,C$

$\therefore$ no. of electrons $= \dfrac{60\times10^{19}}{1.602} = 3.745\times10^{20}$

Topic:Electrochemistry; Sub Topic:Electrolytic cell; L:1 ; Medical-UG ; NEET - II - 2016

Q.61 $H_3BO_3 + 2H_2O \rightleftharpoons \left[B(OH)_4\right]^- + H_3O^+$

Topic:P-Block; Sub Topic:Boric acid; L:1 ; Medical-UG ; NEET - II - 2016

Q.62 $AlF_3 + 3KF \rightarrow K_3\left[AlF_6\right]$

Topic:P-Block; Sub Topic:Alluminium compounds; L:1 ; Medical-UG ; NEET - II - 2016

Q.63 Zn is more electropositive than Fe.

$E^0_{Zn^{+2}/Zn} = -0.76\ V$

$E^0_{Fe^{+2}/Fe} = -0.41V; \qquad E^0_{Fe^{+2}/Fe} = -0.04V$

$\therefore$ zn act as sacrifying metal and protect Fe

Topic: Electrochemistry; Sub Topic:Prevention of corrosion; L:1 ; Medical-UG ; NEET - II - 2016

Q.64 Suspension is called milk of lime.

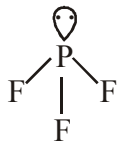
Topic:S-block; Sub Topic:Calcium compounds; L:1 ; Medical-UG ; NEET - II - 2016

Q.65

NO_2^+	NO_3^-	NH_4^+
sp	sp^2	sp^3

Topic:Chemical bonding; Sub Topic:Hybridisation; L:1 ; Medical-UG ; NEET - II - 2016

Q.66



BF_3 is lewis acid and electron deficient.

CF_4, SiF_4 have octet configuration and no lone pair to donate

Topic: P-block ; Sub Topic:Basic nature; L:1 ; Medical-UG ; NEET - II - 2016

Q.67

CO_3^{2-}	NO_3^-	SO_3^{2-}	ClO_3^-
$32\,e$	$32\,e$	$42\,e$	$42\,e$
sp^2	sp^2	sp^3	sp^3
Trigonal planar	Trigonal planar	Tetrahedral	Tetrahedral

Topic:Chemical bonding; Sub Topic:Hybridisation; L:1 ; Medical-UG ; NEET - II - 2016

Q.68 Beryllim salts readily hydrolyze.

Topic:S-block; Sub Topic:Beryllium compounds; L:1 ; Medical-UG ; NEET - II - 2016

Q.69 $CaF_2 + H_2SO_4 \longrightarrow CaSO_4 + 2HF$

(a) $\overset{0}{Cu} \longrightarrow \overset{+2}{Cu}^{+2}$

(b) $\overset{0}{S} \longrightarrow \overset{+4}{SO_2}$

(c) $\overset{0}{C} \longrightarrow \overset{+4}{CO_2}$

Topic:Mole concept; Sub Topic: Oxidation number ; L:1 ; Medical-UG ; NEET - II - 2016

Q.70 $d_{x^2-y^2}$; d_{z^2} are along the axis.

Topic:Atomic structure; Sub Topic: Shapes of orbitals ; L:1 ; Medical-UG ; NEET - II - 2016

Q.71 XeF_4 no. of hybrid orbitals $= \dfrac{8+4}{2} = 6$

sp^3d^2 hybridisation

octahedral geometry

square planar shape

Topic:Chemical bonding; Sub Topic:Hybridisation; L:1 ; Medical-UG ; NEET - II - 2016

Q.72 SeF_4 have see-saw shape

CH_4 have Tetrahedral shape.

I_3^+ has bent shape.

Trigonal bipyramidal geomentry.

Topic:Chemical bonding; Sub Topic:Hybridisation and geomentry; L:1 ; Medical-UG ; NEET - II - 2016

Q.73 Trans effect is the labilzation (making more reactive) of ligands, that are trans to certain other ligands.

$< Py < Cl^- < Br^- < I^-, SCN^-, NO_2^-, SC(NH_2)_2, Ph^- < SO_3^{2-} < PR_3, AsR_3, CH_3^- < H^-,$

NO, CO, CN^-, C_2H_4

Topic:Co-ordination compounds; Sub Topic:Trans effect; L:2 ; Medical-UG ; NEET - II - 2016

Q.74 (1) Eu shows + 2 state

(2) From Pr to Lu due to lanthanoid contraction size decreases therefore basic nature decreases.

(4) $Ce^{+4}_{(aq)}$ is good oxidising agent.

$\therefore$ (3) is wrong.

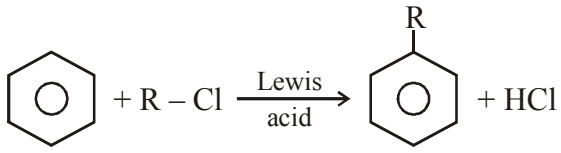
Topic:d and f block ; Sub Topic:Properties; L:2 ; Medical-UG ; NEET - II - 2016

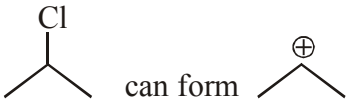
Q.75 Low spin complexes with d^3, d^6, d^8 and d^{10} electrons does not have John-Teller distortions.

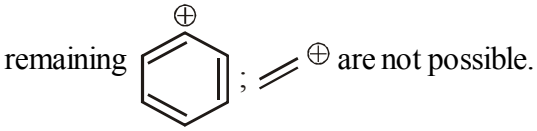
High spin complexes with d^3, d^5, d^8, d^{10} electrons does not show John-Teller distortions.

Topic:Coordination compounds; Sub Topic:John-Teller effect; L:2 ; Medical-UG ; NEET - II - 2016

Q.76 In friedel-crafts reaction



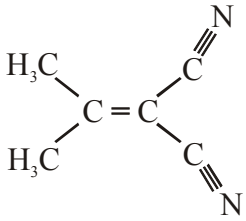




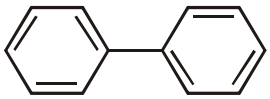
Topic: Aromatic compounds; Sub Topic:Fridel craft reaction; L:1 ; Medical-UG ; NEET - II - 2016

Q.77 Coplanar : all atoms must be in same plane.

(2)  Puckered structure so no planarity

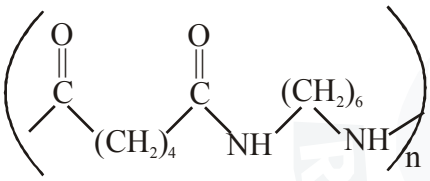
(3)  Hydrogens out of plane

(4)  no planarity

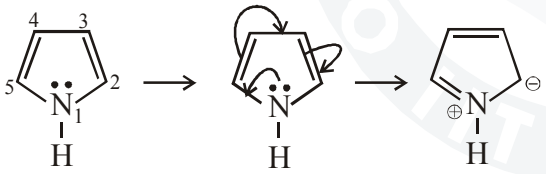
 Planarity is possible due to free rotation it may some time go out of plane.

Topic:GOC; Sub Topic: Planarity; L:1 ; Medical-UG ; NEET - II - 2016

Q.78 6–carbons and 6–carbons during the linkage

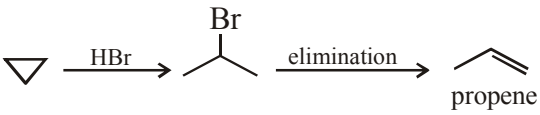


Topic:Polymers; Sub Topic:Co-polymerisation; L:1; Medical-UG ; NEET - II - 2016

Q.79 

i.e., ether (2) (or) (5) carbon.

Topic:GOC; Sub Topic: Resonance; L:1 ; Medical-UG ; NEET - II - 2016

Q.80 (1) 

(2) $H_3C-CH_2-CH_2-OH \xrightarrow{HBr} H_3C-CH_2-CH_2-Br \xrightarrow{\text{elimination}} \underset{\text{Propene}}{H_3C-CH=CH_2}$

(3) $H_2C=C=O \longrightarrow$ No reaction

(4) $H_3C-CH_2-CH_2-Br \xrightarrow{\text{elimination}} \underset{\text{Propene}}{H_3C-CH=CH_2}$

Topic: Hydrocarbon ; Sub Topic:Alkane ; L:2 ; Medical-UG ; NEET - II - 2016

Q.81 The compound with $No\ \alpha - H$ will not react with Nitrous acid.

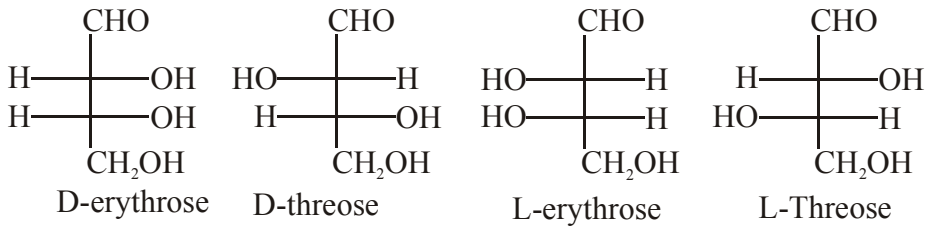
Option 3 is not having $(\alpha - H)$

Topic:Nitrogen and its compounds ; Sub Topic: Chemical properties; L:2 ; Medical-UG ; NEET - II - 2016

Q.82 DNA in copies as messenger RNA (mRNA) which in turn is the template for protein synthesis (uses r-RNA and t RNA)

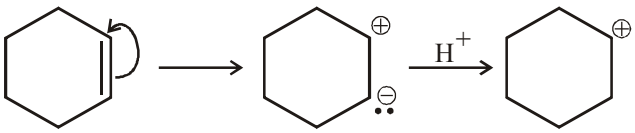
Topic: Biomolecules ; Sub Topic: Proteins ; L:2 ; Medical-UG ; NEET - II - 2016

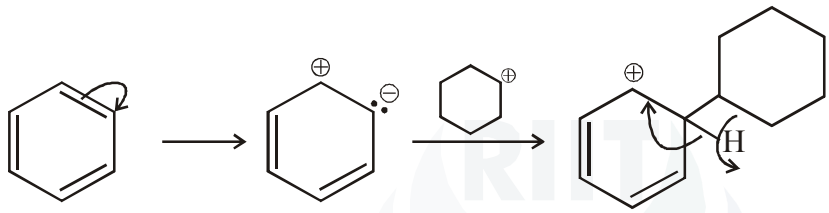
Q.83



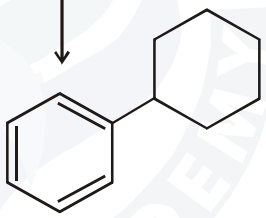
Topic: Biomolecules ; Sub Topic: Carbohydrate ; L:2 ; Medical-UG ; NEET - II - 2016

Q.84 (i)



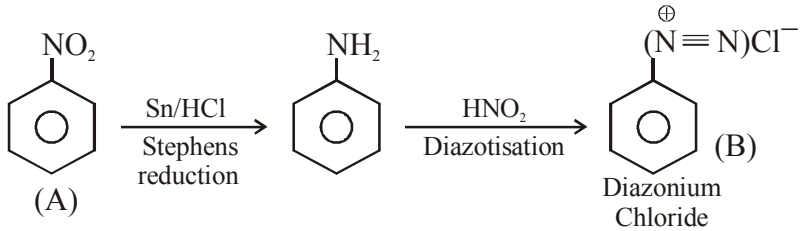


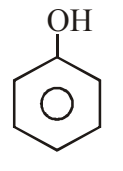
(ii)

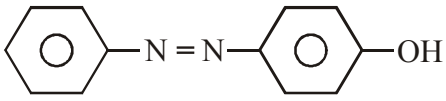


Topic:Aromatic compounds; Sub Topic:Electrophilic substitution; L:2 ; Medical-UG ; NEET - II - 2016

Q.85







(azo compound)
yellow orange solution
or ppt. is formed

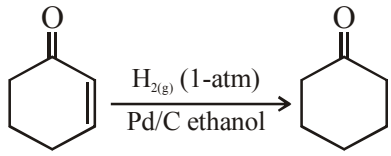
Topic:Nitrogen and its compounds ; Sub Topic: Chemical properties; L:2 ; Medical-UG ; NEET - II - 2016

Q.86 $H_3C-CH_2-CH_2-Br+NaCN \longrightarrow H_3C-CH_2-CH_2-CN + NaBr$

The above reaction follows SN_2 mechanism, which is best in Polar Non Protic Solvent i.e., N,N-dimethyl formamide (DMF).

Topic:Alkyl and Aryl halide; Sub Topic:ST: SN reaction ; L:2 ; Medical-UG ; NEET - II - 2016

Q.87



Reduction take place at Non polar unsaturation. i.e., $(-C=C)$

Topic:Hydrocarbon ; Sub Topic: Chemical properties ; L:2 ; Medical-UG ; NEET - II - 2016

Q.88 Tautomerism takes place with carbonyl compound having $\alpha-H$ atom.

$\alpha-H$ which is at Bridge head C will not get involved in Tautomerism.

Structure (I): $\alpha-H$ are at bridge head so no Tautomerism.

Structure (II): $\alpha-H$ is at bridge head and another $\alpha-C$ is not having $\alpha-H$ so no Tautomerism.

Structure (III): $\alpha-H$ is presents so can undergo Tautomerism.

$\therefore$ Only option III will show Tautomerism.

Topic:GOC; Sub Topic:Tautomerism; L:2 ; Medical-UG ; NEET - II - 2016

Q.89 When an EWG is present close to –COOH due to (-I) effect losing H^+ becomes very easy. (I effect is distance dependent)

Structure-II: –O- is present close to –COOH

$\therefore$ due to –I effect, after that structure III and then structure (–I) i.e., (II) > (III) > (I).

Topic:GOC ; Sub Topic:Inductive effect; L:2 ; Medical-UG ; NEET - II - 2016

Q.90 $Br-Br \longrightarrow Br^+ + Br^-$

Alkene dissociating heterolytically will favour Br_2 addition Reaction.

$$\therefore \underset{(unsymmetrical)}{\text{Propene}} + Br_2 \longrightarrow H_3C-\underset{\displaystyle Br}{\underset{|}{CH}}-\overset{\displaystyle Br}{\overset{|}{CH_2}}$$

Topic: Hydrocarbon ; Sub Topic:Addition reaction; L:2 ; Medical-UG ; NEET - II - 2016

BIOLOGY

Q.91 Fungi possess a cell wall made of Fungal cellulose or chitin.
NCERT X I pg. 22.
Topic:Biological Classification; Sub Topic:Kingdom Fungi; L:1 ; Medical-UG ; NEET - II - 2016

Q.92 Methanogens are primitive bacteria. They are obligate anaerobes, which can tolerate extreme conditions.
NCERT XI .Pg. 19.
Topic:Biological Classification; Sub Topic:Kingdom Monera; L:1 ; Medical-UG ; NEET - II - 2016

Q.93 Diatoms have cell walls impregnated with silica. NCERT XI Pg. 20.
Topic:Biological Classification; Sub Topic:Kingdom Protista; L:2 ; Medical-UG ; NEET - II - 2016

Q.94 Herbarium sheets have local and botanical names, family, collector's names.
NCERT X I. Pg. 12.
Topic:Living World; Sub Topic:Tools for Taxonomic studies; L:1 ; Medical-UG ; NEET - II - 2016

Q.95. Thick cuticle helps to reduce water loss by transpiration during extreme environmental conditions.
NCERT XI. Pg. 38.
Topic:Plant Kingdom; Sub Topic:Gymnosperms; L:2 ; Medical-UG ; NEET - II - 2016

Q. 96. Algin is obtained from brown algae and carrageenin is obtained from red algae. NCERT XI Pg. 32.
Topic:Plant kingdom; Sub Topic:Algae; L:2 ; Medical-UG ; NEET - II - 2016

Q. 97. When the stamens are united into more than two bundles as in citrus, it is polyadelphous conditions.
NCERT XI. Pg. 75.
Topic:Morphology of Flowering Plants; Sub Topic:Flower; L: 2 ; Medical-UG ; NEET - II - 2016

Q. 98. Variation is the length of filaments within a flower will occurs in Salvia, mustard and radish, Salvia didynamous; Mustard rurns and radish - tetradynamous.
Topic:Morphology of Flowering Plants; Sub Topic:Flower; L:3 ; Medical-UG ; NEET - II - 2016

Q. 99. Radial symmetry (Actinomorphic flower) - Chilli, Datura, Mustard.
Bilateral symmetry (Zygomorphic flower) - Pea, Cassia.
NCERT XI. Pg. 72.
Topic:Morphology of Flowering Plants; Sub Topic:Flower; L:2 ; Medical-UG ; NEET - II - 2016

Q.100. Argemone, Brassica - parietal placentation. Citrus - axile placentation.
NCERT XI. Pg. 75.
Topic:Morphology of Flowering Plants; Sub Topic:Flower; L:2 ; Medical-UG ; NEET - II - 2016

Q.101. Pericycle is the outermost part of stele. Vasscular bundle is the stelar region.
NCERT XI. Pg. 89.
Topic:Anatomy of Flowering Plants; Sub Topic:Tissue systems; L:2 ; Medical-UG ; NEET - II - 2016

Q.102. Tyloses are the ingrowths of parenchyma cells adjacent to xylem vessels and tracheids of the heartwood. Tyloses plug the lumen of the vessels and tracheids.
Topic:Anatomy of Flowering Plants; Sub Topic:Heart wood and Sap wood; L:3 ; Medical-UG ; NEET - II - 2016

Q.103. Ribozyme is RNA with an enzyme like activity.

Topic:Biomolecules; Sub Topic:RNA; L:3 ; Medical-UG ; NEET - II - 2016

Q.104. Large central vacuole - plant cells.

NCERT XI. Pg. 134

Topic:Cell the Basic Unit of Life; Sub Topic:- Eukaryotic Cell; L: 1 ; Medical-UG ; NEET - II - 2016

Q.105. Pilli - conjugation Fimbrae - attachment to the substratum.

NCERT XI. Pg. 129

Topic:-Cell the Basic Unit of Life; Sub Topic:- Prokaryotic Cell; L:- 2; Medical-UG ; NEET - II - 2016

Q.106. Lysosomes contain about 40 - 50 hydrolytic enzymes like lipase, protease etc.

NCERT XI. Pg. 134

Topic:Cell - The Basic Unit of Life ; Sub Topic:Lysosome; L:1; Medical-UG ; NEET - II - 2016

Q.107. G_1 phase - Synthesis of RNA and Protein.

G_2 phase - Synthesis of protein in preparation of cell growth. NCERT XI. Pg. 163

Topic:Cell Division; Sub Topic:Cell cycle; L: 2 ; Medical-UG ; NEET - II - 2016

Q.108. Fats undergo β - oxidation forming acetyl CoA. Proteins undergo transamination to form acetyl CoA. Carbohydrates form acetyl CoA through glycolysis and acetylation.

Topic:Cell - Respiration; Sub Topic:Aerobic Respiration; L: 3; Medical-UG ; NEET - II - 2016

Q.109. Cell sap in the vacuole is slightly acidic. Phloem sap is alkaline.

Topic: Transport in Plants; Sub Topic:Phloem Transport; L:3; Medical-UG ; NEET - II - 2016

Q.110. Auxins and cytokinins in different proportions induce organogenesis a higher proportion of auxins induces root formation and a higher prorpation of cytolinins induces shoots.

Topic:Plant Growth and Development; Sub Topic:PGR; L: 2; Medical-UG ; NEET - II - 2016

Q.111. Phytochrome is a blue cytoplasmic chromoprotein in leaves.

Topic:Plant Growth and Development; Sub Topic:Photoperiodism; L:3; Medical-UG ; NEET - II - 2016

Q.112. Calcium helps in meristematic activity in root tips.

Topic:Mineral Nutrition; Sub Topic:Essential Elements; L: 3; Medical-UG ; NEET - II - 2016

Q.113. Photorespiration is negligible or absent in C_4 plants.

NCERT XI Pg. 221

Topic:Photosynthesis; Sub Topic: Dark Reaction; L:3; Medical-UG ; NEET - II - 2016

Q.114. Potato, Banana and ginger plants arise from axillary buds present in the nodes.

Topic:Reproduction in Organisms; Sub Topic: Asexual reproduction; L: 2; Medical-UG ; NEET - II - 2016

Q.115. Sexual reproduction involves fusion of gametese which are formed by meiosis which has crossing over.

NCERT XII Pg. 8

Topic:Principles of Inheritance & Variations; Sub Topic:Genetics; L:1 ; Medical-UG ; NEET - II - 2016

Q.116. Correct match will be as follows :

(a) Pistils fused together $\rightarrow$ (iii) syncarpous.

(b) Formation of gametes $\rightarrow$ (i) gametogenesis.

(c) Hyphae of higher Ascomycetes $\rightarrow$ (iv) Dikaryotic

(d) Unisexual female flower $\rightarrow$ (ii) Pistillate

Topic:Application based; Sub Topic:Application based; L:1 ; Medical-UG ; NEET - II - 2016

Q.117. Megaspore mother cells divide by meiosis to form megaspores. NCERT XII. Pg. 26

Topic:Sexual reproduction in flowering plants; Sub Topic:Female Gametophyte; L:2 ; Medical-UG ; NEET - II - 2016

Q.118. Water hyacinth and water lily are hydrophytes but they are pollinated by insects.

Topic:Sexual reproduction in Flowering plants; Sub Topic:Pollination; L:2 ; Medical-UG ; NEET - II - 2016

Q.119. Ovule is an integumented megasporangium Carpel is the megasporophyll.

Topic:Sexual Reproduction in flowering plants; Sub Topic:Female Gametophyte; L:2 ; Medical-UG ; NEET - II - 2016

Q.120. Meselson and Stahl performed experiment on E. coli to confirm semiconservative method of DNA replication.
NCERT XII. Pg. 106

Topic:Molecular basis of Inheritance; Sub Topic:DNA replication; L:1 ; Medical-UG ; NEET - II - 2016

Q.121. Translocation is a chromosome abnormality caused by rearrangement of parts between nonhomologous chromosomes. Thus it will involve a gene to move from one linkage group to another.
Inversion is a chromosome rearrangement in which a segment of chromosomes is rearranged end to end. It occurs in a reversal manner. Single chromosome undergoes breakage and rearrangment within itself.

Topic:Principle of Inheritance and Variation; Sub Topic:Linkage; L:2 ; Medical-UG ; NEET - II - 2016

Q.122. Cistron or Structural gene is the functional unit of the gene which codes for proteins.

Topic:Molecular Basis of Inheritance; Sub Topic:Gene Concept; L:2 ; Medical-UG ; NEET - II - 2016

Q.123. A true beeeding plant is one that, when self fertilized, only produces off spring with some trait. The organisms are genetically identical and have identical alleles for specified trait.

Topic:Principle of Inheritance and Variation; Sub Topic:Mendelian law; L:2 ; Medical-UG ; NEET - II - 2016

Q.124. 23 S r RNA from large subunit of ribosome acts as structural RNA as well as ribozyme.

Topic: - Biomolecules; Sub Topic:- RNA; L:3 ; Medical-UG ; NEET - II - 2016

Q.125. Stirred tank bioreactors are useful for aeration.
NCERT XII Pg. 204

Topic: Biotechnology : Principle & Processes ; Sub Topic:Obtaining Gene product; L:1 ; Medical-UG ; NEET - II - 2016

Q.126. DNA ligase is the joining enzyme. Ecori is type II. Restriction Enzyme. Taq polymerase is used in PCR. DNA polymerase III is the main polymerising enzyme in prokaryotic DNA replication.
NCERT XII Pg. 202

Topic: Biotechnology : Principle & Processes ; Sub Topic:Obtaining recombinant - DNA; L:- 2 ; Medical-UG ; NEET - II - 2016

Q.127. All the processes after obtaining the product are downstream processing.
NCERT XII Pg. 204 and 205

Topic: Biotechnology : Principle & Process ; Sub Topic:Obtaining gene product; L:2 ; Medical-UG ; NEET - II - 2016

Q.128. EcoRV cuts DNA strands at the same position to provide blunt ends.

Topic: Biotechnology : Principle & Processes ; Sub Topic:Ristriction Enzymes; L:3 ; Medical-UG ; NEET - II - 2016

Q.129. In gene therapy, the faulty gene is identified and the defect is rectified by introducing the correct sequence.
NCERT XII Pg. 211

Topic: Biotechnology & Its Applications ; Sub Topic:Applications in Human Health; L:2 ; Medical-UG ; NEET - II - 2016

Q.130. Biodiversity hotspots are areas with high degree of endemism and species richness.
NCERT XII Pg. 266

Topic: Biodiversity & Its conservation; Sub Topic:Conservation of Biodiversity; L:2 ; Medical-UG ; NEET - II - 2016

Q.131. Deep sea hydrothermal vents do not have oxygen for green algae, blue green algae and coral reefs. Further due to absence of light photosynthesis cannot occur.

Topic: Ecosystem; Sub Topic:Energy Flow; L:2 ; Medical-UG ; NEET - II - 2016

Q.132. r - selected species selection have high fecundity, small size, early maturity onset, short generation time and the ability to disperse offspring widely.

Topic: Organisms & Popluation; Sub Topic:Popluation Attributes; L:3 ; Medical-UG ; NEET - II - 2016

Q.133. Mutualism - (+) , (+)
Amensalism - (–), (0)
Commensalism - (+), (0)
NCERT XII Pg. 232

Topic: Organisms & Populations; Sub Topic:Organisms Interactions; L:2 ; Medical-UG ; NEET - II - 2016

Q.134. Parthenium hysterophorus is a rapidly growing weed which threatens biodiversity.
NCERT XII Pg. 265

Topic: Biodiversity & Its Conservation; Sub Topic:Biodiversity losses; L:2 ; Medical-UG ; NEET - II - 2016

Q.135. Red list in the Red data book published by IUCN has infomation on threatened species.

Topic: Biodiversity & Its Conservation; Sub Topic:Biodiversity Conservation; L:2 ; Medical-UG ; NEET - II - 2016

Q.136. Cholera - Vibrio cholerae and Tetanus - Clostridium tetani.
Small pox - Variola Virus, Typhoid - Salmonella typhi
Mumps - Mumps virus
Herpes - Herpes Zooster Virus
Influenza - Haemophilus Influenza virus

Topic:Human Health and Disease; Sub Topic:Diseases; L:2 ; Medical-UG ; NEET - II - 2016

Q.137. Housfly : -
Family - Muscidae
Order - Diptera
Class - Insecta
Phylum - Arthropoda

Topic:Animal Kingdom; Sub Topic:Non - Chordata; L:2 ; Medical-UG ; NEET - II - 2016

Q.138. All mammals are viviparus except Ornithorhynchus / Duck billed platypus which is oviparous.
All reptiles have 3 chambered heart except crocodile.
All psices have gills covered by operculum except chondrichthyes.
All cyclostomata do not possess jaws and paired fins.

Topic:Animal Kingdom; Sub Topic:Chordata; L:2 ; Medical-UG ; NEET - II - 2016

Q.139. Photoperiod affects flowering in plants. Five kingdom sytem of classification was given by R.H Whittaker

Topic:Living World; Sub Topic:Application Based; L:2 ; Medical-UG ; NEET - II - 2016

Q.140. In male cockroaches, sperms are stored in seminal vesicles till the time of ejaculation.

Topic:Morphology and Anatomy of Cockroach; Sub Topic:Male reproductive system; L:2 ; Medical-UG ; NEET - II - 2016

Q.141. Smooth muslces are involuntary, fusiform in shape and non striated.

Topic:Structural organisation is Animals; Sub Topic:Animal tissues; L:1 ; Medical-UG ; NEET - II - 2016

Q.142. Oxidative phosphorylation occurs during respiration.

Topic: Respiration to Form ATP; Sub Topic:Aerobic Respiration; L:1 ; Medical-UG ; NEET - II - 2016

Q.143. Tertiary structure of proteins is stabilised by hdrogen bonds, ionic bonds, covalent bonds Van der Waal's interactions and hydrophobic bonds.

Topic: Biomolecules; Sub Topic:Proteins; L:3 ; Medical-UG ; NEET - II - 2016

Q.144. When product is at a lower level than substrate, it is an exothermic reaction. In A, the activation energy is reduced due to presence of enzymes. NCERT XI Pg. 156

Topic: Biomolecules; Sub Topic:Enzymes; L:2; Medical-UG ; NEET - II - 2016

Q.145. DNA replication occur in S - phase.

Topic: Cell division; Sub Topic:Cell cycle; L:2 ; Medical-UG ; NEET - II - 2016

Q.146. Option 1 shows the correct match between the stages of meiosis - I and the processes.
NCERT XI Pg. 168

Topic: Cell division; Sub Topic:Meiosis; L:1 ; Medical-UG ; NEET - II - 2016

Q.147. Cholecystokinin stimulates pancreas to secrete pancreatic juice and gall bladder to secrete bile.
Secretin acts on exocrine part of pancreas to secrete bicarbonate ions and water.

Topic:Chemical co - ordination and Integration; Sub Topic:Endrocine glands - GIT; L:1 ; Medical-UG ; NEET - II - 2016

Q.148. The partail pressure of oxygen in alveoli of lungs is 104 mm Hg and that in deoxygenated blood of alveolar capillaries is 49 mm Hg. i.e., PO_2 in alveoli is greater than that in blood.

Topic:Breathing & Exchange of gases; Sub Topic:Physiology of Respiration; L:1 ; Medical-UG ; NEET - II - 2016

Q.149 Nocireceptors respond to pain , - Meissner's corpuscles are tactile receptors.
Receptors produce graded potential that makes membrane potentials less negative and more positive thus creating an action potential due to influx of Na^+ ions & efflux of K^+ ions.

Topic:Nervous control and co - ordination; Sub Topic:sense organs / Receptors; L:3 ; Medical-UG ; NEET - II - 2016

Q.150 Grave's disease/ Exophthalmic goitre is caused to hyper secreation of thyroxine- thyroid gland hypersecreation.

Topic:Chemical co-ordination and integration; Sub Topic:Endocrine glands ; L:1 ; Medical-UG ; NEET - II - 2016

Q.151 The ion responsible for unmasking of active sites for myosin for cross- bridges during muscle contraction is calcium ions.

Topic:Locomotion and movement; Sub Topic:Physiology of muscle contraction ; L:2 ; Medical-UG ; NEET -

II - 2016

Q.152 Thrombocytes/ platelets are the blood cells whose reduction in number can cause clotting disorder, leading to excess loss of blood from body.

Topic:Body fluids and Circulation; Sub Topic:Blood ; L:1 ; Medical-UG ; NEET - II - 2016

Q.153 Insulin is a peptide hormone which acts on hepatocytes, adipocytes and enhances cellular glucose uptake and utilization and thus decreases blood glucose levels.

Topic:Chemical co-ordination and Integration; Sub Topic:Endocrine glands ; L:1 ; Medical-UG ; NEET - II - 2016

Q.154 Osteoporosis, an age related disease of skeletal system may occur due to decreased level of Oestrogen.

Topic:Chemical co-ordination and Integration; Sub Topic:Endocrine glands ; L:2 ; Medical-UG ; NEET - II - 2016

Q.155 Serum differs from blood in lacking clotting factors.

Topic:Body fluids & Circulation; Sub Topic:Blood ; L:1 ; Medical-UG ; NEET - II - 2016

Q.156 There is negative intrapleural pressure pulling at lung walls due to which lungs do not collapse between breaths and thus residual volume of air is always present in lungs.

Topic:Breathing & Exchange of gases; Sub Topic : Physiology of Respiration; L:3 ; Medical-UG ; NEET - II - 2016

Q.157 Posterior pituitary gland is not a true endocrine gland as it just stores and releases hormone produced by hypothalamus, ADH and Oxytocin.

Topic:Chemical co-ordination & Integration; Sub Topic:Endocrine glands; L:2 ; Medical-UG ; NEET - II - 2016

Q.158 Distal convoluted tubule is the part of nephron involved in active reabsorption of sodium ions.

Topic:Excretion & Osmoregulation; Sub Topic:Physiology of urine formation; L:2 ; Medical-UG ; NEET - II - 2016

Q.159 LNG- 20 Levo Nor Gesterol is a hormone releasing IUD - progesterone releasing IUD

– Cu- 7 & multiload 375 is copper releasing IUD &

– Lippe's loop is Non- medicated IUD.

Topic:Reproductive health; Sub Topic: Birth control measures; L:2 ; Medical-UG ; NEET - II - 2016

Q.160 Vasectomy is a type of contraception in which small part of vas deferens is removed or tied up through a small incision on scrotum due to which semen is without sperms, but sperms are present in epididymils.

Topic:Reproductive health; Sub Topic: Birth control measures; L:2 ; Medical-UG ; NEET - II - 2016

Q.161 Embryos with more than 16 blastomeres formed due to in vitro fertilization is transfered into uterus - Intra Uterine Transfer -IUT.

Topic:Reproductive health; Sub Topic: Assisted reproductive tecnhologies; L:2 ; Medical-UG ; NEET - II - 2016

Q.162. Correct pathway of transport of sperms is -

Rete Tests - Efferent Tubules $\rightarrow$ Epididymis $\rightarrow$ Vas Deferens

Topic:Human Reproduction; Sub Topic: Male reproductive system; L:2 ; Medical-UG ; NEET - II - 2016

Q.163. Mons pubis - Female external Genitalia.

Antrum - Graafian Follicle

Trophoectoderm - Embryo Formation

Nebenkern - Sperm

Topic:Human Reproduction; Sub Topic: Female reproductive system; L:2 ; Medical-UG ; NEET - II - 2016

Q.164. Several hormones like

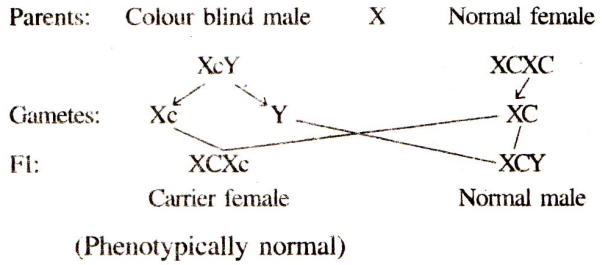
hCG - Human Chorionic Gonadotropin

hPL - Human Placental lactogen

Estrogen and Progesterone are produced by Placenta.

Topic:Chemical co - ordination & Integration / Human reproduction; Sub Topic: Placenta ; L:2 ; Medical-UG ; NEET - II - 2016

Q.165. GTB - 145 - XII - Flow chart.



(Phenotypically normal)

If a color blind man marries a women who is homozygous for normal colour vision, the probability of their son being colour blind is 0 (zero).

Topic:Principles of Inheritance & Variations; Sub Topic: Sex linked disorderes; L:2 ; Medical-UG ; NEET - II - 2016

Q.166. Genetic drift operates in small isolated population. This is known as Sewall Wright effect.

Topic:Origin & Evolution of life; Sub Topic: Organic Evolution; L:2 ; Medical-UG ; NEET - II - 2016

Q.167. In Hardy - Weinberg equations, the frequency of heterozygous individual is 2pq, according to binomial expansion of $(p + q)^2$.

Topic:Origin & Evolution of life; Sub Topic: Organic Evolution; L:2 ; Medical-UG ; NEET - II - 2016

Q.168. The chronological order of human evolution from early to recent is :

Ramapithecus $\rightarrow$ Australopithecus $\rightarrow$ Homo Habilis $\rightarrow$ Homo erectus.

Topic:Origin & Evolution of life; Sub Topic: Human Evolution; L:2 ; Medical-UG ; NEET - II - 2016

Q.169. In the origin of life, the correct sequence of events is :

I : Synthesis of organic monomers.

$\downarrow$

II : Synthesis of organic polymers.

$\downarrow$

III : Formation of protobionts

$\downarrow$

IV : Formation of DNA based genetci systems

Topic:Origin & Evolution of life; Sub Topic: Origin of life; L:2 ; Medical-UG ; NEET - II - 2016

Q.170. The genetic material must be structurally and chemically stable

Topic:Molecular Basis of Inheritance; Sub Topic: Introduction; L:2 ; Medical-UG ; NEET - II - 2016

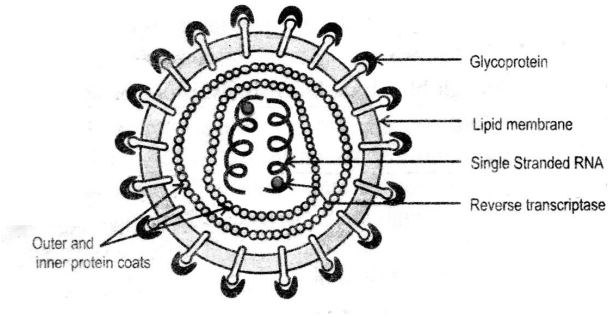
Q.171. Transcription occurs on the antisense or template strand(3' → 5') in 5' → 3' direction.

Topic:Molecular Basis of Inheritance; Sub Topic:Transcription; L:2 ; Medical-UG ; NEET - II - 2016

Q.172. Interspecific hybridisation - In this method male and femal animals of two different species are mated. e.g. Mule.

Topic:Strategies & Improvement in food; Sub Topic: Animal Husbandary - breeding; L:1 ; Medical-UG ; NEET - II - 2016

Q.173. Sean the diagram - GTB - XII. Biology Pg. No. 168.



HIV is envolved virus that contains two identical molecules of single - stretched RNA and two molecules of reverse transcriptase.

Topic:Human Health & Diseases; Sub Topic: AIDS; L:3 ; Medical-UG ; NEET - II - 2016

Q.174. Rastrelliger (Mackerel) is a marine fish, Mystus, Magus and Mrigala are freshwater fishes.

Topic:-Strategies for enhancement in Food Production; Sub Topic: -Fisheries; L:2 ; Medical-UG ; NEET - II - 2016

Q.175. Citric acid - Aspergillus
Cyclosporin A - Trichoderma
Statins - Monascus
Butyric acid - Clostridium
CBSE, NCERT XII Pg. 183

Topic:Microbes in Human Welfare, Microbes in Chemical, enzymes; Sub Topic: other bioactive molesules; L:2 ; Medical-UG ; NEET - II - 2016

Q.176. Water bodies receiving effluents from petroleum industry do not have very high BOD.

Topic:Environmental issues, Domestic sewage; Sub Topic: Industrial effluents; L:2 ; Medical-UG ; NEET - II - 2016

Q.177. The principle of competitive exclusion was stated by G. F. Gause.

Topic:Organisms; Sub Topic: Population; L:1; Medical-UG ; NEET - II - 2016

Q.178. Dachigam National Park, Jammu and Kashmir is home to the famous musk deer (hangul).

Topic:Biodiversity; Sub Topic: Conservation of Biodiversity; L:3 ; Medical-UG ; NEET - II - 2016

Q.179. Presence of large amount of organic waste (nutrient) in water causes algal bloom, which cause fish mortality.

Topic:Environmental issues, Domestic sewage; Sub Topic: Industrial Effluent; L:2 ; Medical-UG ; NEET - II - 2016

Q.180. Bioconcetration is always highest at last trophic level. In aquatic food chain, seagull is the topmost trophic level.

Topic:Environmental issues; Sub Topic: Biomagnification; L:2 ; Medical-UG ; NEET - II - 2016