MHTS - 2 - Physics (2017 Aspirants) - Solution

(1) $\frac{dN}{dt} = \lambda N = \eta$

$\lambda = \frac{\eta}{N}$

$T_{1/2} = \frac{\ln 2}{\lambda} = \frac{N \ln 2}{\eta}$

(2) $A \xrightarrow{1\text{ year}} \frac{A}{10} \xrightarrow{1\text{ year}} \frac{A}{10} \times \frac{1}{10} \xrightarrow{1\text{ year}} \frac{A}{100} \times \frac{1}{10}$

(3) $KE_{max} = h\nu - \phi$

$E_1 = 2h\nu_0 - h\nu_0 = h\nu_0 = \frac{1}{2} m v_1^2$

$E_2 = 5h\nu_0 - h\nu_0 = 4h\nu_0 = \frac{1}{2} m v_2^2$

$v_2 = 2v_1$

(7) $\vec{A}+\vec{B}=\vec{R}$

$A^2+B^2+2AB\cos\theta = R^2$

$(\vec{A}+2\vec{B})\cdot\vec{A} = 0$

$A^2+2\vec{B}\cdot\vec{A} = 0$

$A^2+2AB\cos\theta = 0$

$B^2+0 = R^2$

(6)

A	B	Y
1	0	1
1	1	0
0	0	0

(5) $T \propto n$

(4) $\alpha = \frac{I_C}{I_B} = \frac{10\,mA}{I_B} = 100$

$I_B = \frac{10\times10^{-3}}{100} = 10^{-4}A = 100\,\mu A$

(13) $kx = m\omega^2(\ell + x)$

$$x = \frac{m\omega^2 \ell}{k - m\omega^2}$$

$$\ell + x = \ell\left(1 + \frac{m\omega^2}{k - m\omega^2}\right) = \frac{k\ell}{k - m\omega^2}$$

(12) $d \sin\theta = \lambda$

$$\frac{d}{\lambda} = \frac{1}{\sin 30^\circ} = 2$$

$$d \sin\theta_1 = \frac{3\lambda}{2}$$

$$\sin\theta_1 = \frac{3\lambda}{2d} = \frac{3}{4}$$

(11) (B)

(10) $\frac{2d}{3} - \frac{d}{2} = \frac{4d - 3d}{6} = \frac{d}{6}$

(9) $\frac{dQ}{Q} = \frac{3dA}{A} + \frac{3dB}{B} - \frac{dC}{C} - \frac{1}{2}\frac{dD}{D}$

$= 3\times 2 + 3\times -3 - (1) - \frac{1}{2}\times -4$

$= 6 - 9 - 1 + 2$

$= -2\%$

(8) $\pm\frac{dQ}{Q} = \pm\frac{3dA}{A} \pm \frac{3dB}{B} \pm \frac{dC}{C} \pm \frac{1}{2}\frac{dD}{D}$ (Error will always add up)

$= \pm(3\times 2 + 3\times 1 + 3 + \frac{1}{2}\times 4) = \pm 14\%$

(16) $i = \frac{V}{Z} = \frac{V}{X_L} = \frac{V}{\omega L}$

$\frac{i_1}{i_2} = \frac{\omega_2}{\omega_1} = 4I$

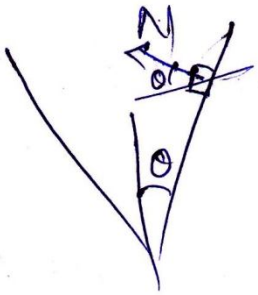
(15) $\mathcal{E} = \frac{V_{AB}}{\ell_{AB}} \cdot L = \frac{V'_{AB}}{\ell_{AB}} \cdot L'$

$\frac{E}{Q \cdot \ell_{AD}} L = \frac{E}{3 \cdot \ell_{AB}} \cdot L'$

$L' = \frac{3}{2}\ell$

(14) $N\cos\theta = m\omega^2 R$

$N\sin\theta = mg$



$\tan\theta = \frac{g}{\omega^2 R}$

$\omega^2 = \frac{g}{R\tan\theta}$

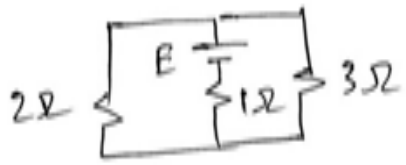
$\tan\theta = \frac{R}{h}$

$v^2 = \frac{gR}{\tan\theta} = gh$

$v = \sqrt{gh} = \sqrt{10 \times .2} = \sqrt{2}$

(20) Emf = BLV

$= 0.1 \times 0.1 \times 1 = 0.01\ V$



$i = \frac{0.01}{1 + \frac{3\times 2}{3+2}} = \frac{0.01}{1+1.2} = \frac{0.01}{2.2} = \frac{1}{220}$

(19) (3)

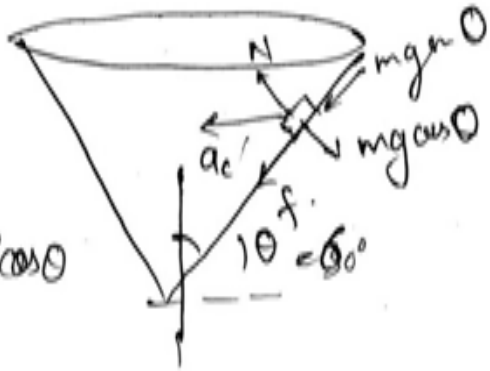
(18) $-T_1\vec{a_1} - T_2\vec{a_2} - T_3\vec{a_3} = 0$

$2T_1 = T_2$ & $2T_2 = T_3 = 4T_1$

$1\vec{a_1} + 2\vec{a_2} + 4\vec{a_3} = 0$

(17) $\mu N + mg\sin\theta = m\omega^2 R\cos\theta$

$N - mg\cos\theta = m\omega^2 R\sin\theta$



$\mu(m\omega^2 R\sin\theta + mg\cos\theta) + mg\sin\theta = m\omega^2 R\cos\theta$

$\frac{mg(\mu\cos\theta + \sin\theta)}{(\cos\theta - \mu\sin\theta)} = m\omega^2 R$

$\sqrt{50\left(\frac{1.832}{.827}\right)} = \omega = \sqrt{\frac{g}{R}\left(\frac{.1\times\frac{1}{2} + \frac{\sqrt{3}}{2}}{\frac{1}{2} - \frac{0.1\times\sqrt{3}}{2}}\right)}$

$= 10.52$

(26) The force will not be zero.
As it is not a uniform $\vec{B}$.

(25) KE converts to PE for the duration of collision.

(24) $3(-1) + 6(2) = 3v + 6v$

$$v = \frac{9}{9} = 1$$

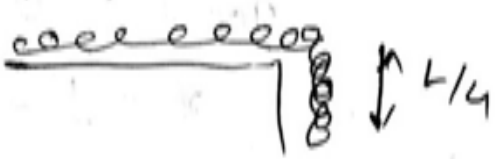
$$\frac{1}{2} \times 3 \times 1^2 + \frac{1}{2} \times 6 \times 2^2 = \frac{1}{2} \times (6+3) \times 1^2 + \frac{1}{2} 4200 \times x^2$$

$$\frac{3}{2} + 12 = \frac{9}{2} + \frac{1}{2} \times 200 \times x^2$$

$$100x^2 = 9$$

$$x = \frac{3}{10} = .30 \text{ cm}$$

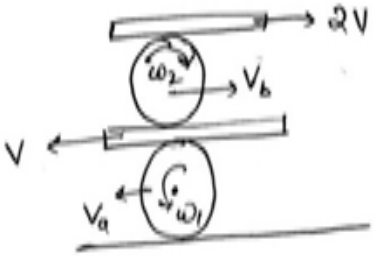
(23) $W = \frac{M}{4} \cdot g \cdot \left(\frac{L}{8}\right)$ ⟶ not $L/4$ coz you need to pull the chain's COM



(22) (1)

(21) $\vec{B} = iBl = 2 \times 4 \times 4 = 16$

(29)



$V_a = \omega_1 R$ & $V = V_b + \omega_1 R = 2V_a$

$V_b + \omega_2 R = 2V$ & $\omega_2 R - V_b = V$

$2\omega_2 R = 3V$

$\omega_2 R = \frac{3}{2} V = \frac{3}{2} \cdot 2V_a = 3V_a$

$\frac{\omega_1}{\omega_2} = \frac{1}{3}$ & $\frac{\omega_2}{\omega_1} = 3$ //

(28) $m_A \vec{S}_A + m_B \vec{S}_B + m_{boat} \vec{S}_{boat} = 0$

$60(1+x) + 70(1-x) + 70(x) = 0$

$60 + 60x + 70x = 0$

$-70 \quad +70x$

$200x = 10$

$x = \frac{1}{20}$ m = 5a ~~Right~~

(27) $\vec{B} = \frac{\mu_0 I}{2R} \times \frac{1}{4} (\hat{i} + \hat{j} + \hat{k}) = \frac{\mu_0 I}{8R} (\hat{i} + \hat{j} + \hat{k})$

$\vec{A} = \frac{\pi R^2}{4} (\hat{i} + \hat{j} + \hat{k})$

$\vec{m} = \vec{B} \cdot \vec{A} = \frac{\mu_0 \pi R I}{32} (\hat{i} + \hat{j} + \hat{k})$

(34) $\frac{x}{12} = \frac{40}{60}$

$x = 8$

(35) $mg = Ma$

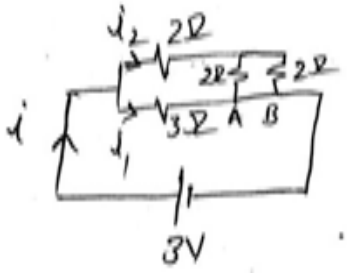
(36) $W = \Delta U = \left(\frac{-GMm}{R+h}\right) - \left(\frac{-GMm}{R}\right)$

$= GMm\left(\frac{1}{R} - \frac{1}{R+h}\right) = \frac{GMm(h)}{R(R+h)}$

also $\frac{GMm}{R^2} = mg$.

$W = \frac{mgRh}{R+h} = \frac{PRh}{R+h}$

(37) $i = \frac{3}{3/2} = 2A$



$i_1 = 1A$ & $i_2 = 1A$

$i_{AB} = i_1 + \frac{i_2}{2} = 1 + \frac{1}{2} = \frac{3}{2}A$ (i_2 will go $\frac{i_2}{2}$ in two parallel 2Ω resistance)

(38) $mg\sin\theta - f = ma$

$f R = \left(\frac{2mR^2}{3}\right)\alpha$

$mg\sin\theta = ma + \frac{2}{3}ma$

$a = \frac{mg\sin\theta}{\quad} = \frac{3g\sin\theta}{5}$

$mg\sin\theta - 0 = ma$

$a = g\sin\theta$

(36) $mg = F_B + F_V$

$S.\frac{4}{3}\pi r^3 g = S_\ell \cdot \frac{4}{3}\pi r^3 g + 6\pi\eta r V$

$$V = \frac{2}{9}\frac{(S-S_\ell)r^2 g}{\eta}$$

If $\frac{m_1}{m_2} = \frac{1}{64} = \frac{S.r_1^3}{S.r_2^3} \Rightarrow \frac{r_1}{r_2} = \frac{1}{4}$

$$\frac{V_1}{V_2} = \frac{r_1^2}{r_2^2} = \frac{1}{16}$$

(35) I when both keys are open.

$$i = \frac{E_1}{R_1 + R_{AB}} = \frac{4}{R_1 + R}$$

II

$E_2 = E_1 - i R'_{AB}$

$= 4 - \frac{4}{R_1+R} \cdot \frac{R_{AB} \times 31.25}{50}$

$E_2 = 4 - \frac{1\cancel{2}5}{50}\left(\frac{R_{AB}}{R_1+R}\right) = 4 - \frac{\cancel{8}\ 1}{\cancel{50}\ 10} \times \frac{\cancel{125}\times\cancel{16}}{\cancel{50}\times 25}$

$E_2 = 3V$ ✓

(40) $\Rightarrow \frac{dQ}{dt} = \frac{\Delta T}{R_{thermal}} = \frac{\Delta T}{L/kA}$

as the thickness of ice increases the thermal Resistance increases

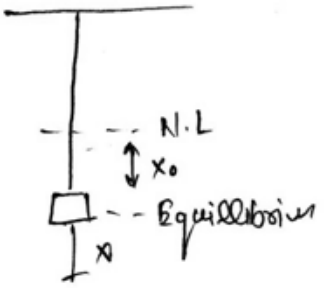
(39) $y_1 = 5\sin(20\pi t - 0.2\pi x)$ $\quad V_1 = \frac{20\pi}{0.2\pi} = 100$

$y_2 = 10\sin(40\pi t - 0.4\pi x)$ $\quad V_2 = \frac{40\pi}{0.4\pi} = 100$

$$\frac{I_1}{I_2} = \frac{\frac{1}{2}\rho\omega_1^2 A_1^2 V_1}{\frac{1}{2}\rho\omega_2^2 A_2^2 V_2} = \frac{400\pi^2}{1600\pi^2} \cdot \frac{25}{100} \cdot \frac{100}{100}$$

$$= \frac{1}{16}$$

(38)



$kx_0 = mg$

$x_0 = \frac{mg}{k}$

If $x > x_0$ then the string slacks in the upward motion

(37) When the stone was floating (intrapped in the ice) the boyancy force > the boyancy force when it sinks

(45) $F = \frac{d\vec{p}}{dt} = \frac{dm}{dt}(\Delta\vec{v}) = \rho A v (\sqrt{2}v)$

$= \rho l (\sqrt{2}v)$

(44) $V = E - iR$

$= 120 - 50\left(0.03\ \frac{\Omega}{km} \times 2\,km\right)$

$= 120 - 100 \times .03\,\Omega = 117\,\Omega$

(43) $+20 - \frac{Q}{4} - 10 - \frac{Q}{4} = 0$

$\frac{Q}{2} = 10$

$Q = 20\,\mu C$

(42) $Q = CV$ & $V = \frac{Q}{C}$

$V_1 + V_2 = V$ & $\frac{V_1}{V_2} = \frac{C_2}{C_1} = \frac{k_2 A_2 \varepsilon_0}{d_2} \cdot \frac{d_1}{k_1 A_1 \varepsilon_0} = \frac{k_2 d_1}{k_1 d_2} = \frac{1}{2} \cdot \frac{6}{2} = \frac{3}{2}$

$\boxed{2V_1 = V_2}$

(42) $+20 - \frac{Q}{4} - 10 - \frac{Q}{4} = 0$

46. (1)
4th complex cannot show geometrical isomerism due to presence of symmetrical ligand.

47. (2)
$25 \times N_1 = 40 \times 0.4$

$N_1 = \frac{16}{25} = 0.64N$

Volume strength $= 0.64 \times 5.6 = 3.584$

48. (3)
$\pi = icRT$

$4.92 = i \times 0.1 \times 0.0821 \times 300$

$i = 1.99$

$\alpha = \frac{i-1}{n-1} = \frac{1.99-1}{3-1} = 0.49$

% of $\alpha = 49\%$

49. (1)

$\Delta G = -nFE \Rightarrow E = -\frac{\Delta G}{nF} = \frac{965 \times 10^3}{4 \times 96500} = -2.5$

The potential difference needed for the reduction = 2.5V

50. (2)
$NaCl(aq) + AgNO_3(aq) \longrightarrow AgCl(s) + NaNO_3(aq)$

143.5 g of $AgCl$ is got from 58.5 g of $NaCl$

$\therefore$ 0.287 g of $AgCl$ is got from $\frac{58.5}{143.5} \times 0.287 = 0.117g$

$\therefore$ % purity of sample $= \frac{0.117}{2} \times 100 = 5.85\%$

51. (2)

$Z = \frac{\rho \times a^3 \times N_A}{M} = \frac{2.75 \times \left(660 \times 10^{-10}\right)^3 \times 6.023 \times 10^{23}}{119} = 4$

$\therefore$ Number of formula units per unit cell = 4

No.of unit cells $= \frac{23.8}{119 \times 4} \times 6.023 \times 10^{23} = 0.05 \times 6.023 \times 10^{23} = 3.011 \times 10^{22}$

52. (4)

m eq of $NaOH = 16 \times \frac{1}{5} = 3.2$

20ml of acid requires 3.2m eq of $NaOH$

500ml acid requires $\frac{3.2 \times 500}{20} = 80m$ eq of $NaOH$

m.eq. of $NH_3 = m\ eq\ of\ H_2SO_4 - m\ eq of\ NaOH$

$= 100 - 80 = 20$

$\% N = \frac{1.4\ m\ eq of\ NH_3}{wt\ of\ O.C}$

$\therefore\ wt\ of\ O.C = \frac{1.4 \times 20}{14} = 2g$

53. (3)

54. (4)

55. (1)

$PCl_5 \rightleftharpoons PCl_3 + Cl_2$

1 0 0

$(1-x)$ x x

Total no.of moles $= 1 - x + x + x = (1+x)$

$K_p = \frac{\left(\frac{x}{1+x}\right)P \times \left(\frac{x}{1+x}\right)P}{\left(\frac{1-x}{1+x}\right)P} = \frac{x^2}{1-x^2} \times P$

$x = \sqrt{\frac{K_p}{K_p + P}}$

56. (2)

57. (4)

58. (4)

59. (1)

60. (3)

61. (2)

62. (3)

63. (4)

$4LiNO_3 \xrightarrow{\Delta} 2Li_2O + 4NO_2 + O_2$

64. (3)

65. (4)
66. (2)

67. (3)

$t_{93.75\%} = 4 \times t_{50\%} = 120\,\text{min}$

$\therefore \quad t_{50\%} = \dfrac{120}{4} = 30\,\text{min}$

$\therefore \quad K = \dfrac{0.693}{t_{1/2}} = \dfrac{0.693}{30} = 2.31 \times 10^{-2}\ \text{min}^{-1}$

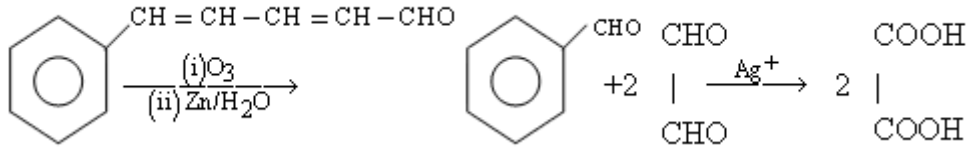
Rate at the end of 120 min $= 2.31 \times 10^{-2} \times 0.125 = 2.88 \times 10^{-3} M\ \text{min}^{-1}$

68. (4)

69. (2)

70. (4)

71. (2)



72. (2)

73. (4)

74. (3)

75. (4)

76. (3)

Meq of salt = Meq of Na_2SO_3

$50 \times 0.1 \times n = 25 \times 0.1 \times 2$

$\therefore \quad n = 1 \quad \left[\text{change in (O.N.)}\right]$

$\therefore \quad M^{3+} + e^- \longrightarrow M^{2+}$

77. (4)

Allotropes of an element have the same chemical properties but have different arrangement of atoms and physical properties.

78. (1)

It undergoes dehydration easily as the product obtained is conjugated, and is more stable.

79. (3)

Polarity in a molecule gives rise to an increase in forces of attraction among molecules and thus, the boiling point increases.

80. (4)

Being amphoteric , $Al(OH)_3$ is soluble in NaOH solution whereas $Fe(OH)_3$ is insoluble.

81. (3)

$$CaC_2 \xrightarrow{H_2O} C_2H_2 \xrightarrow[Hg^{2+}(catalyst)]{H_2O} CH_3CHO \xrightarrow[Ni]{H_2} CH_3CH_2OH$$

82. (4)

Let w g of each be taken, then initial mole of $P = \frac{w}{10}$; mol of $Q = \frac{w}{20}$

Final mole of $P = \frac{w_1}{5\times 10}$ Final mole of $Q = \frac{4w_1}{20\times 5}$

For P $\frac{P_{N_0}}{P_N} = e^{\lambda_1 t}$ For Q $\frac{Q_{N_0}}{Q_N} = e^{\lambda_2 t}$

$\therefore$ For P $\frac{w\times 5\times 10}{10\times w_2} = e^{\lambda_1\times 20}$

For Q $\frac{w\times 20\times 5}{20\times w_1\times 4} = e^{\lambda_2\times 20}$

By Eqs. (i) and (ii) $4 = e^{(\lambda_1-\lambda_2)\times 20}$

$\therefore \quad 20(\lambda_1-\lambda_2) = \log_e 4$

or $20\left(\frac{0.693}{10} - \frac{0.693}{t_{1/2}}\right) = \log_e 4$

$\therefore \qquad t = \infty$

83. (3)

$$FeSO_4\cdot 7H_2O \xrightarrow{\Delta} FeSO_4 + 7H_2O;$$

$$2FeSO_4 \xrightarrow{\Delta} Fe_2O_3 + SO_2 + SO_3$$

84. (1)

$$\underset{(A)}{C_3H_6Cl_2} \begin{cases} \xrightarrow{KOH(aq)} \underset{(B)}{C_3H_6O} \\ \text{or} \\ \xrightarrow{KOH(alc)} \underset{(C)}{C_3H_4} \end{cases}$$

$$CH_3C\equiv CH \xrightarrow[H^+.Hg^{2+}]{H_2O} CH_3COCH_3 \xrightarrow[+NaOH]{Br_2} CHBr_3 + CH_3COONa$$

Since, B and D are different, thus B is CH_3CH_2CHO and so A is $CH_3CH_2CHCl_2$.

85. (4)

Higher vapour pressure of H_2O in atmosphere will drive H_2O vapours to the solute particles.

86. (3)

$$HO{-}SO_2OH + PCl_5 \longrightarrow Cl{-}SO_2Cl + POCl_3 + 2HCl$$

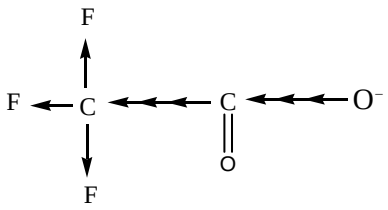
87. (1)

must be a tertiary alcohol as it gives alkene on treatment with Cu. Thus, C_4H_8O is a ketone.

88. (3)
phenomenon of conversion of freshly precipitated mass into colloidal state by the action of solute or solvent is
called peptization.

89. (3)
The solubility of noble gases increases with increase in molecular weight due to increase in van der Waals'
forces. However, these are sparingly soluble.

90. (3)
Follow applications of inductive effect. The negative charge on carboxylate ion is dispersed more due to −IE of F atom.



The carboxylate ion thus becomes more stable and the acid becomes more reactive.

MHTS - 2 - Botany (2017 Aspirants) - Solution

91. (1) (XI)(NCERT Pg. 11)
P-iv, Q-iii, R-ii, S-i

92. (2) (XI)(NCERT Pg. 229, 232)

93. (4) (XI)(NCERT Pg. 19)
Chlorophyll a, photoautotrophs
A is incorrect as plants do not have phycocyanin.
B is incorrect as plants do not have heterocyst.
C is incorrect as Cyanobacteria have chlorophyll a.

94. (1) (XII)(NCERT Pg.5)

95. (3) (XI)(NCERT Pg. 27)
They do not grow in polluted areas.

96. (2) (XII)
To produce 1 zygote = 1 male gamete + 1 female gamete

To produce 1 male gamete = 1 meiosis and 4 viable pollen grains are formed,but only 1 is used to fertilize 1 female gamete
No.of meiotic divisions are 1/4

To produce 1 female gamete = 1 meiosis and 1 viable megaspore is formed,thus
No. of meiotic divisions are 1
Thus,
To produce 1 zygote meiotic divisions required = ¼ + 1= 5/4
Hence, for 200 zygotes meiotic divisions required = 200 multiplied by 5/4= 250

97. (1) (XI)(NCERT Pg. 36)
In bryophytes zygote does not undergo reduction division immediately.
Incorrect statements:
(2) Leafy members having leaf like appendages in two rows on the stem like structures are not observed in liverworts. (as they are observed in liverworts)
(3) Leafy stage of mosses develops from the primary protonema as a lateral bud. (as leafy stage of mosses develop from secondary protonema)
(4) Sporophyte of mosses is less elaborate then that of liverworts. (as sporophyte is less elaborate in liverworts as compared to mosses)

98. (4) (XII)(NCERT Pg. 85)

99. (1) (XI)(NCERT Pg. 38)
Selaginella – Lycopsida
Incorrect pairs-
(2) *Adiantum* – Sphenopsida (It belongs to Pteropsida)
(3) *Equisetum* - Pteropsida (It belongs to Sphenopsida)
(4) *Salvinia* - Homosporous (It is heterosporous)

100. (2) (XII) (NCERT Pg.99)

101. (4) (XI)(NCERT Pg. 39)
Unlike bryophytes and pteridophytes, in gymnosperms, the female gametophytes do not have independent free living existence.

102. (2) (XII) (NCERT Pg.182)

103. (1) (XI)(NCERT Pg. 201)

The Nitrobacter oxidise nitrite of nitrate

104. (2) (XII) (NCERT Pg.179,181,182,185)

105. (4) (XI)(NCERT Pg. 197)
Sulphur is present in Cysteine Methionine, Ferredoxin and Coenzyme A

106. (1) (XII)(NCERT Pg. 25)

107. (1) (XI)(NCERT Pg. 249)
Spraying of juvenile conifers with GA hastens the maturity period and thus leading to early seed production.

108. (1) (XII) (NCERT Pg.112)

109. (1) (XI)(NCERT Pg. 243)
Exponential growth can be expressed as $W_1 = W_0 e^{rt}$

110. (1) (XII) (NCERT Pg.271)

111. (3) (XI)(NCERT Pg. 163)
In the 24 hour average duration of cell cycle of a human cell, cell division proper lasts for about 1 hour.

112. (3) (XII)(NCERT Pg. 83)

113. (4) (XI)(NCERT Pg. 164, 165)
Initiation of assembly of mitotic spindle – Mitotic metaphase
This is incorrect pair as initiation of assembly of mitotic spindle occurs in Mitotic prophase

114. (2) (XII) (NCERT Pg.117)

115. (3) (XI)(NCERT Pg. 129)
As Reserve material in prokaryotic are stored in the form of inclusion bodies.

116. (1) (XII) (NCERT Pg.176)

117. (2) (XI)(NCERT Pg. 131)
In human beings, the membrane of erythrocyte has 52 % proteins and 40% lipids

118. (1) (XII) (NCERT Pg.265)

119. (4) (XI)(NCERT Pg. 189)
Incorrect statements:
iii and iv, as C_4 plants are twice as efficient as C_3 plants in terms of fixing carbon.

120. (1) (XII) (NCERT Pg.251)

121. (3) (XI)(NCERT Pg. 189)
Root endodermis because of the layer of suberin has the ability to actively transport ions in one direction only.

122. (4) (XII)(NCERT Pg. 26)

123. (2) (XI)(NCERT Pg. 212)
PS II

124. (2) (XI)(NCERT Pg.231)

125. (3) (XI)(NCERT Pg. 220)
In photorespiratory pathway sugar and ATPs are not synthesized

126. (3) (XII) (NCERT Pg.235)

127. (1) (XI)(NCERT Pg. 208)
T. W. Englemann

128. (4) (XII)(NCERT Pg. 90)

129. (4) (XI)(NCERT Pg. 71)
Palmately compound

130. (1) (XII) (NCERT Pg.243)

131. (4) (XI) (NCERT Pg. 68)

Sweet potato is analogous to potato, as sweet potato is a modified root and potato is a modified stem and both store food. Organs with different origin, but which perform similar function are analogous organs.

132. (2) (XII) (NCERT Pg.266)

133. (1) (XI) (NCERT Pg. 68)
Opuntia is a xerophtic plant in which the stem is modified into the flat green and succulent structure.

134. (4) (XII) (NCERT Pg.231)

135. (4) (XI) (NCERT Pg. 74)

136. (3) (XII)(NCERT Pg. 91)

137. (2) (XI)(NCERT Pg. 96)
Sap wood

138. (1) (XII)(NCERT Pg. 33)

139. (2) (XI)(NCERT Pg. 97)
All tissues exterior to vascular cambium

140. (3) (XI)(NCERT Pg.229)

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141. (4) XI, NCERT Page - 49
142. (1) XII, NCERT Page – 212, 5th para, 4th line
143. (2) XI, NCERT Page – 52, 2nd para
144. (2) XII, NCERT Page – 202, Fig. – 11.6
145. (4) XI, NCERT Page – 54, 2nd para, last lines
146. (2) XII, NCERT Page – 194, 195
147. (3) XI, NCERT, Page - 59
148. (1) XII, NCERT, Page – 169, 5th para, 4th line
149. (3) XI, NCERT, Page – 104, 1st para
150. (1) XII, NCERT, Page – 154, Last para, 2nd line
151. (4) XI, NCERT, Page – 112, 1st para, 15th line
152. (1) XII, NCERT, Page – 153, 2nd para, 1st line
153. (2) XI, NCERT, Page - 144
154. (4) XII, NCERT, Page – 157, 2nd para, 3rd line
155. (1) XI, NCERT, Page – 146, Table 4.3
156. (2) XII, NCERT, Page – 137, 3rd para, last line
157. (2) XI, NCERT, Page – 157, Fig. 9.7C
158. (4) XII, NCERT, Page – 141, 2nd line
159. (1) XI, NCERT, Page – 258, 2nd line
160. (3) XII, NCERT, Page – 136, Fig. 7.8
161. (1) XI, NCERT, Page – 262 & 263
162. (2) XII NCERT Page – 53, 2nd para
163. (1) XI, NCERT, Page – 274, 2nd para, 9th line
164. (3) XI
165. (2) XI, NCERT, Page – 272, Table 17.1
166. (2) XII, NCERT, Page – 53, 2nd para, 1st line
167. (1) XI, NCERT, Papillary muscles are found in ventricles. Ductus arteriosus is found only in foetal heart.
168. (3) XII, NCERT, Gastrulation involves cell differentiation and morphogenetic movements.
169. (3) XI, NCERT, Page – 284, 2nd para
170. (2) XII, NCERT
171. (3) XI, NCERT, Page – 293, 2nd para
172. (4) XI, NCERT, Page – 288
173. (4) XI, NCERT, Page – 296, 1st para
174. (3) XI, NCERT, Page – 332, 2nd para, 1st line
175. (4) XI, NCERT, Page – 306, 3rd line, 1st para
176. (2) XI, NCERT, Page – 335, 1st para
177. (4) XI, NCERT, Page – 321. 1st para
178. (2) XI, NCERT, Page – 337, 335, 2nd para
179. (4) XI, NCERT, Its inborn reflex hence unconditional. As it involves many neurons and effectors hence polysynaptic.
180. (1) XI, NCERT, Page – 324, 4th para