SAFE HANDS & IIT-ian's PACE

MOCK TEST# 09 (NEET) SOLUTIONS

PHYSICS SOLUTIONS

1. (b)

Sol. $[C^2LR] = \left[C^2L^2\frac{R}{L}\right] = \left[(LC)^2\left(\frac{R}{L}\right)\right]$

and we know that frequency of LC circuits is given by $f = \frac{1}{2\pi}\frac{1}{\sqrt{LC}}$ i.e., the dimension of LC is equal to $[T^2]$

and $\left[\frac{L}{R}\right]$ gives the time constant of $L-R$ circuit so the dimension of $\frac{L}{R}$ is equal to [T].

By substituting the above dimensions in the given formula $\left[(LC)^2\left(\frac{R}{L}\right)\right] = [T^2]^2[T^{-1}] = [T^3]$.

2. (b)

Sol. $R = \frac{V}{I} \qquad \therefore \left(\frac{\Delta R}{R}\times 100\right)_{max} = \frac{\Delta V}{V}\times 100 + \frac{\Delta I}{I}\times 100$

$= \frac{5}{100}\times 100 + \frac{0.2}{10}\times 100 = (5+2)\% = 7\%$

3. (d)

Sol. $3t = \sqrt{3x} + 6 \Rightarrow \sqrt{3x} = (3t-6) \Rightarrow 3x = (3t-6)^2$

$\Rightarrow x = 3t^2 - 12t + 12$

$\therefore$ v = $\frac{dx}{dt} = \frac{d}{dt}(3t^2 - 12t + 12) = 6t - 12$

If velocity = 0 then, $6t - 12 = 0 \Rightarrow t = 2sec$

Hence at t = 2, x = $3(2)^2$ – 12 (2) + 12 = 0 metres.

4. (b)

Sol. Maximum acceleration during journey = slope of CD

= $\frac{DG}{CG} = \frac{60-20}{1-0.75} = \frac{40}{0.25}$ = 160 km hr^{-2}

Distance covered in the asked interval

= Area of rectangle KCGH + Area of ΔCDG.

= (0.25 × 20) + 1/2(40 × 0.25) = 5 + 5 = 10 km

5. (a)

Sol. $\tan\alpha = \frac{u\sin\theta - gt}{u\cos\theta}$

6. (a)

Sol. Unit vector perpendicular to the directions of $\vec{A}$ and $\vec{B}$ is

$$\hat{n} = \frac{(\vec{A}\times\vec{B})}{|\vec{A}\times\vec{B}|}$$

$$\vec{A}\times\vec{B} = \begin{vmatrix} \hat{i} & \hat{j} & \hat{k} \\ -2 & 3 & 1 \\ 1 & 2 & -4 \end{vmatrix}$$

$$= \hat{i}(-12-2) + \hat{j}(1-8) + \hat{k}(-4-3)$$

$$= -14\hat{i} - 7\hat{j} - 7\hat{k}$$

$$|\vec{A}\times\vec{B}| = \sqrt{(-14)^2 + (-7)^2 + (-7)^2} = 7\sqrt{6}$$

$$\therefore \hat{n} = \frac{-14\hat{i} - 7\hat{j} - 7\hat{k}}{7\sqrt{6}} = \frac{-2\hat{i} - \hat{j} - \hat{k}}{\sqrt{6}}$$

7. (c)

Sol. When fireman slides down, Tension in the rope

$T = m(g-a)$

For critical condition m(g – a) = 2/3 mg $\Rightarrow mg - ma = \frac{2}{3}mg \quad \therefore \quad a = \frac{g}{3}$

So, this is the minimum acceleration by which a fireman can slides down on a rope.

8. (a)

Sol. $v = \sqrt{\mu rg} = \sqrt{0.5\times 500\times 10} = 50\ m/s.$

9. (d)

Sol. $U = \frac{1}{4\pi\varepsilon_0}\frac{q_1q_2}{r} = \frac{9\times10^9\times(1.6\times10^{-19})^2}{100\times10^{-15}} = 2.304\times10^{-15}$

$J = \frac{2.304\times10^{-15}}{1.6\times10^{-19}}eV = 1.44\times10^4 eV$

10. (a)

Sol. $P = 3t^2 - 2t + 1$ $\frac{dK}{dt} = P$

$\Rightarrow \Delta K = \int_2^4 P\,dt = 46\ J$

11. (a)

Sol. $\vec{v} = \vec{\omega}\times\vec{r}$

$= (3\hat{i}+4\hat{j}+0\hat{k})\times(0\hat{i}+\hat{j}+2\hat{k}) = \begin{vmatrix} \hat{i} & \hat{j} & \hat{k} \\ 3 & 4 & 0 \\ 0 & 1 & 2 \end{vmatrix} = 8\hat{i}-6\hat{j}+3\hat{k}$

12. (d)

Sol. K.E. = $\frac{1}{2}I\omega^2 \Rightarrow$ K.E. $\propto \omega^2$ % increase K.E.

$= \frac{KE_f - KE_i}{KE_i}\times 100$

$= \frac{5^2-4^2}{4^2}\times100$

$= \frac{9}{16}\times100 = 56\%$

13. (a)

Sol. Because in beam type balance effect of less gravitation force works on both the Pans. So it is neutralizes but in spring balance weight of the body decreases so apparent weight varies with actual weight.

14. (a)

Sol. From Kepler's seconds law of planetary motion, the
linear speed of a planet is maximum when its distance from the sun is least.

15. (a)

Sol. Since strain is zero therefore Y is infinite.

16. (b)

Sol. U = $\frac{1}{2}\text{stress} \times \text{strain} = \frac{1}{2} \times S \times \frac{S}{Y} = \frac{S^2}{2Y}$

17. (b)

Sol. Pressure at bottom of the lake = $P_0 + h\rho g$ and pressure ay half the depth of a lake $= P_0 + \frac{h}{2}\rho g$

According to given condition $P_0 + \frac{1}{2}h\rho g = \frac{2}{3}(P_0 + h\rho g)$

$\Rightarrow \frac{1}{3}P_0 = \frac{1}{6}h\rho g \Rightarrow h = \frac{2P_0}{\rho g} = \frac{2 \times 10^5}{10^3 \times 10} = 20m$.

18. (a)

Sol. Upthrust $= V\rho_{\text{liquid}}(g - a)$; where, a = downward acceleration, V = volume of liquid displaced

But for free fall a = g

$\therefore$ Upthrust = 0

19. (c)

Sol. Temperature on any scale can be converted into other scale by $\frac{X - LFP}{UFP - LFP}$ = Constant for all scales

$\therefore \frac{X - 20°}{150° - 20°} = \frac{C - 0°}{100° - 0^o} \Rightarrow X = \frac{C \times 130°}{100°} + 20°$

$= \frac{60° \times 130°}{100°} + 20° = 98°$

20. (b)

Sol. $C_{rms} = \sqrt{\frac{3RT}{M}}$ or $C_{rms} \alpha \sqrt{T}$

$$\frac{(C_{rms})_{T_2}}{(C_{rms})_{T_1}} = \sqrt{\frac{T_2}{T_1}} = \sqrt{\frac{400}{100}} = 2$$

$(C_{rms})_{T_2} = 2(C_{rms})_{T_1} = 2 \times v = 2v$

21. (c)

Sol. From ideal gas equation $PV = \mu RT$ we get

$$\frac{T_2}{T_1} = \left(\frac{P_2}{P_1}\right)\left(\frac{V_2}{V_1}\right) = \left(\frac{2P_1}{P_1}\right)\left(\frac{3V_1}{V_1}\right) = 6$$

$\therefore\ T_2 = 6T_1 = 6 \times 300 = 1800\ K = 1527\,°C.$

22. (c)

Sol. As we have seen in theory, the KE oscillates with double the frequency i.e. with 2f. Hence Answer is (C)

23. (d)

Sol. Simple harmonic motion is the projection of uniform circular motion on any diameter of reference circle.

24. (a)

Sol. $y = a \sin[\omega t - kx + \phi]$

$\therefore\ v = \frac{\omega}{K} \Rightarrow v = \frac{7\pi}{0.04\pi} = 175$ m/s

25. (a)

Sol. $\frac{3V}{2\ell} = \frac{3V}{4 \times 2m}$ or $\ell = \frac{8m}{2} = 4m$

26. (b)

By using $Q = ne \ \Rightarrow\ n = \frac{Q}{e}$

$$\Rightarrow n = \frac{1}{1.6 \times 10^{-19}} = 6.25 \times 10^{18}$$

27. (a)

By using $E = -\frac{dV}{dx}$;

$E = -\frac{d}{dx}(5x^2 + 10x - 9) = (10x + 10)$,

at x = 1m $E = -20\ V/m$

28. (a)

$\mathbf{W}_{ext} = q(V_B - V_A)$; $V_B - V_A = \frac{15}{.01} = 1500$ volt

29. (a)

5 capacitors in parallel gives 5 x 2 μF = 10μF capacity. Further, two capacitors in series gives a capacity 1μF. When the two combinations are connected in series, they give a resultant capacitance $\left(\frac{10\ x1}{10+1}\right) = \left(\frac{10}{11}\right)$ μF

30. (d)

Sol. $(1\times10^6 \pm 5\%)$

31. (a)

Sol. In the parallel combination.

$\frac{\varepsilon_{eq}}{r_{eq}} \frac{\varepsilon 1}{r_1} + \frac{\varepsilon_2}{r_2} + ... + \frac{\varepsilon n}{r_n}$

$\frac{4}{r_{eq}} = \frac{1}{r_1} + \frac{1}{r_2} + ... + \frac{1}{r_n}$

$(\because \varepsilon_1 = \varepsilon_2 = \varepsilon_3 = ... = \varepsilon_n = \varepsilon$ and $r_1 = r_2 = r_3 = ...r_n = r)$

$\therefore \frac{\varepsilon_{eq}}{r_{eq}} = \frac{\varepsilon}{r} + \frac{\varepsilon}{r} + ... + \frac{\varepsilon}{r} = n\frac{\varepsilon}{r}$ …(i)

$\frac{1}{r_{eq}} = \frac{1}{r} + \frac{1}{r} + ... + \frac{1}{r} = \frac{n}{r}$

$r_{eq} = r/n$ …(ii)

From (i) and (ii),

$$\varepsilon_{eq} = n\frac{\varepsilon}{r} \times r_{eq} = n \times \frac{\varepsilon}{r} \times \frac{r}{n} = \varepsilon$$

32. (c)

Sol. Due to charge q moving on circular path

$$B_{centre} = \frac{\mu_0 I}{2R} = \frac{\mu_0 qf}{2R} = \frac{\mu_0 q\omega}{4\pi R}$$

33. (d)

Sol. $\tau = NI\,AB\sin\theta \Rightarrow I\frac{\sqrt{3}}{4}\ell^2 B \sin 90^0 = \frac{\sqrt{3}}{4} IB\ell^2$

34. (d)

Sol. On the axis of a magnetic dipoles, magnetic induction is,

$$B = \frac{\mu_0}{4\pi} \times \frac{2m}{r^3}$$

Here, $r = 1\overset{o}{A} = 10^{-10} m, m = 1.4 \times 10^{-26} A\,m^2$

and $\frac{\mu}{4\pi} = 10^{-7} N A^{-2}$

$$\therefore B = \frac{10^{-7} \times 2 \times 1.4 \times 10^{-26}}{(10^{-10})^3}$$

$$= \frac{10^{-7} \times 2.8 \times 10^{-26}}{10^{-30}} = 2.8 \times 10^{-3} T = 2.8 mT$$

35. (b)

Sol. Here,

$$N = 300, I = 15 A, r = 7 cm = 7 \times 10^{-2} m$$

$$\therefore M = NIA = NI \times \pi r^2$$

$$= 300 \times 15 \times 3.14 \times (7 \times 10^{-2})^2$$

$$= 69.2 JT^{-1}$$

36. (a)

Sol.

$$e = -L\frac{dI}{dt} = -\frac{d}{dt}[3t^2 + 2t] = -L[6t + 2] = -10 \times 10^{-3}[6t + 2]$$

$$(e)_{\text{at } t=2} = -10 \times 10^{-3}(6 \times 2 + 2) = -10 \times 10^{-3}(14) = -0.14\ volt\ ;\ |e| = 0.14\ volt$$

37. (a)

Sol. When the magnet is pushed into the coil magnetic flux linked with the coil changes. An emf is induced in the coil which produces maximum deflection.

38. (b)

Sol. In an inductor voltage leads the current by $\frac{\pi}{2}$ or current las the voltage by $\frac{\pi}{2}$.

39. (b)

Sol. At resonance frequency, the inductive capacitive reactance are equal.

i.e., , $X_L = X_C$

$\therefore$ Impedance,

$$Z = \sqrt{R^2 + (X_L - X_C)^2} = \sqrt{R^2 + 0^2} = R$$

40. (b)

Sol. Energy of γ-ray is maximum. So wavelength is minimum.

41. (a)

Sol. When plane electromagnetic wave is incident on a material surface, the wave delivers some momentum and energy to the surface and hence

42. (d)

Sol. By using

$$L_D = f_o + u_e = f_o + \frac{f_e D}{f_e + D} = 50 + \frac{5 \times 25}{(5 + 25)} = \frac{325}{6}\ cm$$

43. (a)

Sol. $m = \frac{f}{f - u} \Rightarrow -3 = \frac{f}{f - (-20)} \Rightarrow -3f - 60 = f$

$\therefore$ $f = -15$ cm

44. (b)

Sol. $\frac{3D\lambda}{2a} - \frac{D\lambda}{a} = \frac{D\lambda}{2a} = \frac{2\times 4000\times 10^{-10}}{2\times 0.5\times 10^{-3}}$

$= 0.8 \times 10^{-3}$ m = 0.8 mm

45. (c)

Sol. Width ratio, $\frac{\beta_1}{\beta_2} = \frac{I_1}{I_2} = \frac{81}{1}$

$\therefore$ Amplitude ratio,

$\frac{A_1}{A_2} = \sqrt{\frac{I_1}{I_2}} = \sqrt{\frac{81}{1}} = 9:1$

46. (c)

Sol. Since γ-photons have energies of the order of MeV hence they are emitted in nuclear process because nuclear energy levels are of the order of MeV.

47. (a)

Sol. Mass of nucleus should be less than mass of nucleons.

48. (d)

Sol. $v = \frac{c}{137}\left(\frac{Z}{n}\right)$ $\because$ Z = 1, n = 1 $\therefore$ c/137

49. (a)

Sol. ${}_ZX^A$ Where, A = mass no. = total no. of proton + no. of neutron

Z = Atomic no. = no. of proton

50. (a)

Sol. NAND

CHEMISTRY SOLUTIONS

SECTION-A

51. (c)

Sol. $\overset{0}{P_4} + 3NaOH + 3H_2O \rightarrow \underset{\text{Sodium hypophosphite}}{3NaH_2PO_2} + \overset{-3}{PH_3}$.

It shows oxidation and reduction (Redox) properties.

52. (c)

Sol. Higher is the reduction potential stronger is the oxidising agent. Hence in the given options. MnO_4^- is strongest oxidising agent.

53. (b)

Sol. To prevent rancidification of food material we add anti-oxidant which are called oxidation inhibitor.

54. (d)

Sol. $K_2\underline{Mn}O_4 \quad 2 + x - 2 \times 4 = 0$

$x = 8 - 2 = +6$

So, oxidation state of *Mn* is +6.

55. (b)

Sol. $[\underline{Fe}(H_2O)_5 NO]SO_4$ [Oxidation number of H_2O = 0 ; Oxidation number of NO = 1; Oxidation number of SO_4^{2-} =–2]

$x + 0 + 1 - 2 = 0$ or $x - 1 = 0$ or $x = +1$

56. (d)

Sol. Glucose + Tollen's reagent $\rightarrow$ Gluconic acid + Ag-mirror.

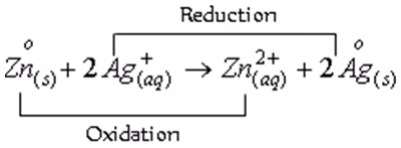
57. (b)

Sol. Sucrose is not a reducing sugar.

58. (b)

Sol. Monosaccharide cannot be hydrolysed to simple forms.

59. (a)



Sol. In this reaction zinc act as a anode and Ag act as a cathode.

60. (c)

Sol. Reduction of $>C=O$ to CH_2 can be carried out with Wolf Kischner reduction.

61. (a)

Sol. Chloral $CCl_3CHO,$ has no α-hydrogen atom and hence does not undergo aldol condensation.

62. (d)

Sol. $CH_3-CH_2-\overset{O}{\overset{\|}{C}}-CH_2-CH_3$ do not have $CH_3-\overset{O}{\overset{\|}{C}}-$ Group

63. (b)

Sol. $[Co(en)_2Br_2]Cl_2$

$C.N.\text{of } Co =$ 2 × number of bidentate ligand

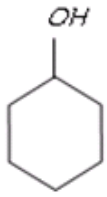
+1×number of monodentate ligand =2× 2 + 1× 2 = 6.

64. (c)

Sol. EAN =Atomic number – Oxidation state + 2 × number of Ligands = 26 – 2 + 2 (6) = 36.

65. (b)

Sol.



Cyclohexanol is a secondary alcohol because $-OH$ group is linked to 2^o carbon.

66. (a)

Sol. Methanol is also referred as wood alcohol or wood spirit or wood naphtha as the earliest method for its preparation was by destructive distillation of wood.

67. (c)

Sol. $C_2H_5ONa + IC_2H_5 \rightarrow C_2H_5OC_2H_5 + NaI$

68. (b)

Sol. Cassiterite SnO_2 or tinstone – an ore of tin being non-magnetic can be separated from magnetic impurities like Fe and Mn from this method.

69. (d)

Sol. Roasting (Sulphide ore is heated in excess of air)

70. (c)

Sol. Van Arkel method Ti and Zn are refined by this method. It is used for obtaining ultra pure metals.

71. (b)

Sol. Silver ore forms a soluble complex when leached with NaCN solution and from which silver is precipitated using scrap zinc.

Ag_2S (conc. ore) + 2NaCN $\overset{\text{Air}}{\rightleftharpoons}$ 2AgCN + Na_2S.

$4Na_2S + 5O_2 + 2H_2O \longrightarrow 2Na_2SO_4 + 4NaOH + 2S$

Na_2S is converted in to Na_2SO_4 . Hence equilibrium shifts towards right side.

$AgCN + NaCN \longrightarrow Na[Ag(CN)_2]$ (soluble complex).

72. (c)

Sol. In isolated system neither exchange of matter nor exchange of energy is possible with surroundings.

73. (b)

Sol. $H-H + Br-Br \rightarrow 2H-Br$

$433+192$ 2×364

625 728

Energy absorbed = Energy released

Net energy released $= 728-625 = 103kJ$

i.e., $= \Delta H = -103\,KJ$

74. (b)

Sol. Tetragonal system has the unit cell dimension

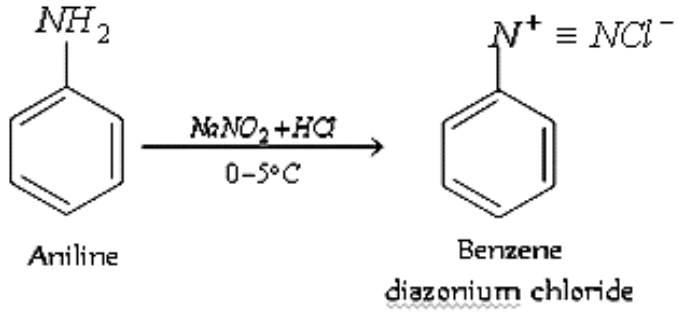
$a = b \neq c, \alpha = \beta = \gamma = 90°$.

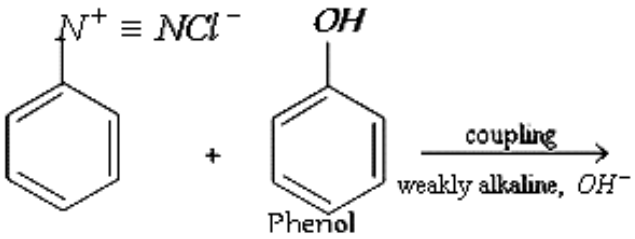
75. (b)

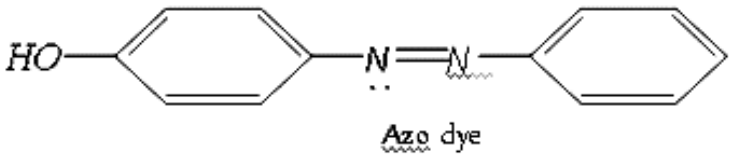
Sol. The system ABC ABC…… is also referred to as face-centred cubic or fcc.

76. (a)

Sol. When aniline is treated with HNO_2 at 0–5°C then diazonium salt is formed and by the coupling of diazonium salt and phenol azo dyes are prepared.





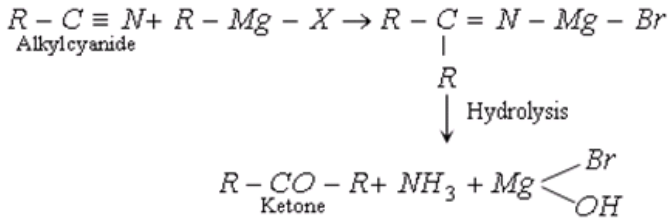


77. (c)

Sol. $R - C \equiv N + 2H_2O \xrightarrow{\text{Hydrolysis}} R - COOH + NH_3$

78. (b)

Sol.

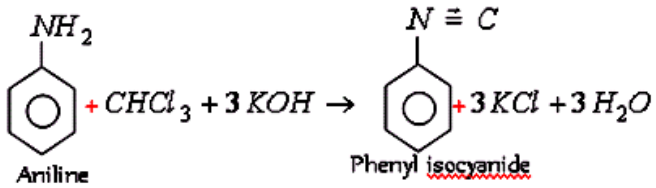


79. (a)

Sol. $\underset{2^o \text{ amine is most basic}}{(CH_3)_2NH} > \underset{1^o \text{ amine}}{CH_3NH_2} > \underset{3^o \text{ amine}}{(CH_3)_3N} > \underset{\text{Ammonia is least basic}}{\overset{\cdot\cdot}{N}H_3}$

80. (b)

Sol.



81. (a)

Sol. Animal charcoal is a good adsorbate. The impurities adsorbs on its surface and thus it decolourises colour of liquids.

82. (a)

Sol. $\underset{(g)}{N_2} + \underset{(g)}{3H_2} \xrightarrow[\text{Mo promoter}]{\text{FeCatalyst}} \underset{(g)}{2NH_3}$

83. (d)

Sol. Activation energy changes when catalyst is used in a reaction.

84. (b)

Sol. 1 mole of CH_4 contains 4 mole of hydrogen atom i.e. 4g atom of hydrogen.

85. (a)

Sol. Atomic mass $= \frac{10\times19+81\times11}{100} = \frac{190+891}{100} = \frac{1081}{100}$

$= 10.81$

SECTION-B

86. (c)

Sol. $Ca_3P_2 + 6H_2O \rightarrow 2PH_3 + 3Ca(OH)_2$

87. (a)

Sol. $R-OX + HX \rightarrow R-X + H_2O$

Reactivity order of alcohols for this reaction

$3^o > 2^o > 1^o$

Reactivity order of halogen acids

$R-I > R-Br > R-Cl$

88. (c)

Sol. $C_2H_5-O-C_2H_5 + 2HI \rightarrow \underset{\text{Ethyliodide}}{2C_2H_5I} + H_2O$

89. (b)

Sol. $C_2H_5OH + SOCl_2 \xrightarrow{\text{Pyridine}} C_2H_5Cl + SO_2 + HCl$

90. (a)

Sol. $-\frac{1}{3}\frac{d[A]}{dt} = -\frac{d[B]}{dt} = \frac{+d[C]}{dt} = \frac{+d(D)}{dt}$.

91. (a)

Sol. $K = Ae^{-E_a/RT}$ by this equation it is clear that rate constant of a reaction depends on temperature.

92. (b)

Sol. $\underset{(1-\alpha)}{HBr} \rightleftharpoons \underset{\alpha}{H^+} + \underset{\alpha}{Br^-}$

Total = 1 + α $\therefore$ $i = 1+\alpha = 1+0.9 = 1.9$

$\Delta T_f = iK_f \times m = 1.9\times1.86\times\frac{8.1}{81}\times\frac{1000}{100} = 3.53^oC$

$T_f = -3.53^oC$.

93. (c)

Sol. $BaCl_2 \Rightarrow Ba^{2+} + 2Cl^- = 3$ ion

$NaCl \Rightarrow Na^+ + Cl^- = 2$ ion

Glucose $\Rightarrow$ No ionization $\therefore BaCl_2 > NaCl >$ Glucose

94. (c)

Sol. Starch is a natural polymer and other are synthetic.

95. (a)

Sol. Thermoplastic are those which becomes soft on heating and can be remoulded again.

96. (c)

Sol. BHC i.e., benzene hexachloride is an insecticide.

97. (d)

Sol. $2CH_3COONa + 2H_2O \xrightarrow{\text{Electrolysis}}$

$CH_3 - CH_3 + 2CO_2 + 2NaOH + H_2$

98. (a)

Sol. Methane is the main component of natural gas.

99. (d)

Sol. According to markownikoff's rule.

100. (a)

Sol. Kr has atomic no. 36 which is a noble gas and all noble gases are included in the *p*-block.

BOTANY SOLUTIONS

101 – b, NCERT 12th , page 115

102 – d, I^Ai and I^AI^A gives blood group A, I^AI^B= blood grp. AB, I^Bi= blood grp. B

103 - b NCERT 11th , page 232

104 – d

105 – a, NCERT 11th, page 233

106 – c, NCERT 11th, page 216, 217

107 – b, NCERT 11th , page 212, fig. 13.5

108 – a

109 – d, NCERT 11th , page 168, exchange of alleles takes place between homologous chromosomes during crossing over – genetic recombination

110 – b, NCERT 12th , page 85

111 – a

112 – b, NCERT 12th, page 119

113 – a, NCERT 11th, page 23

114 – c, NCERT 12th, page 107, 108

115 – a

116 – d, NCERT 12th , page 87

117- d, NCERT 12th, page 114

118 – b, NCERT 11th , page 170

119 – b, NCERT 12th, page 117

120 – d

121- c, the resultant zygote will have XXY genotype i.e. for Klinefelter's syndrome

122 – b, Pleiotropy is where one gene controls more than one character

123 –c, NCERT 11th , page 223

124- d, NCERT 11th , page 233, fig.14.4

125- b, zygospore is diploid , all others are haploid

126 - d, NCERT 11th, page 26

127 - a, NCERT 11th, page 32, 33

128 - c, NCERT 12th, page 183

129 - d, NCERT 11th, page 138, 139

130 - c, NCERT 11th, page 131, 132

131 – a, Growth rate = b-d/ t= 25-55/10= -3

132 – c, NCERT 11th, page 176, 177

133 – d, NCERT 11th, page 79 for Soyabean ; 10 stamens in 10 flowers = 100 stamens total,

In each anther 4 microsporangium present so total = 100 x 4 = 400

In each microsporangium , 10 PMC, so in all, 400 x 10= 4000 PMC

Each PMC on meiosis gives 4 microspores, so total microspores = 4000 x 4 = 16,000

134 – b, NCERT 12th, page 33

135 – b, nucellus, suspensor, cotyledon and integument diploid

136 – a, NCERT 11th, page 14

137 – c, NCERT 12th, page 281, fig. 16.6

138 – a, NCERT 12th, page 249

139 – d,

140 – b, family includes a group of genera

141 – c, NCERT 12th , page 7, 8

142 – a, NCERT 11th, page 195, 196

143 – b,

144 – a

145 - c, NCERT 11th, page 76

146 – c, NCERT 11th , page 94

147 – a, NCERT 11th, page 189

148 – c, NCERT 12th, page 263

149 – c, NCERT 12th , page 265

150 – c, NCERT 11th, page 91

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151 – d, NCERT 11th, page 145

152 – b, NCERT 11th, page 285

153 – d, NCERT 12th, page 152

154 – a, NCERT 11th, page 156, fig. 9.6

155 – a, NCERT 11th, page 150, fig. 9.3

156 – a, NCERT 11th, page 293

157 – b, NCERT 12th, page 48, 49

158 – c, NCERT 11th, page 318, 319, 320

159 – d, NCERT 11th, page 321

160 – d, NCERT 11th, page 145

161 – a, NCERT 12th, page 212

162 – b, NCERT 12th, page 51

163 – d, NCERT 11th, page 297

164 – c, NCERT 12th, page 157

165 – a, NCERT 12th, page 162

166 – a, NCERT 11th, page 317, 320, 321

167 – d, Aedes is an arthropod with chitinous exoskeleton while all others have endoskeleton

168 – a

169 – c, NCERT 11th, page 59

170 – a, NCERT 12th, page 153

171 – b, NCERT 11th , page 55

172 – c, NCERT 11th, page 102

173 – b, NCERT 11th, page 104

174 – c, NCERT 12th , page 64

175 – a, NCERT 12th, page 59

176 – b, NCERT 11th, page 339

177 – b, NCERT 12th , page 47, 48

178 – b

179 – c, NCERT 12th , page 43, fig. 3.1a

180 – c, NCERT 11th , page 340

181 – d, NCERT 11th , page 335

182 – b, CO binds to hemoglobin at O2 binding site and so reduces O2 carried by hemoglobin in blood

183 – b,

184 – d, NCERT 11th , page 298

185 – d, NCERT 11th , page 294, 295 fig. 19.5

186 – b,

187 – b, NCERT 11th , page 112, fig 7.15

188 – b, NCERT 11th , page 111, fig.7.14

189 – c, NCERT 11th , page 302, 303

190 – b, NCERT 12th, page 169

191 – b, NCERT 12th , page 139, fig. 7.10

192 – c, for percentage of heterozygous individuals ,

2pq= 2 x 0.19 x0.81 = 0.31 or 31%

193 – d, NCERT 12th, page 141

194 – a, NCERT 11th, page 144

195 – a, NCERT 12th, page 204, fig.11.7

196 – d, NCERT 12th, page 60, fig. 4.2

197 – a, NCERT 12th, page 51

198 – a, NCERT 11th, page 266

199 – d, NCERT 11th, page 309

200 – c, NCERT 11th, page 326