

PACE-IIT & MEDICAL

ANSWER KEY FOR MOCK TEST- 22 (FOR 2020 ASPIRANTS) (22nd May 2020)

1. (2)	2. (4)	3. (4)	4. (2)	5. (3)
6. (1)	7. (2)	8. (1)	9. (2)	10. (3)
11. (2)	12. (2)	13. (3)	14. (3)	15. (3)
16. (3)	17. (3)	18. (3)	19. (2)	20. (3)
21. (3)	22. (2)	23. (3)	24. (4)	25. (1)
26. (3)	27. (2)	28. (4)	29. (2)	30. (4)
31. (4)	32. (2)	33. (2)	34. (4)	35. (1)
36. (1)	37. (2)	38. (3)	39. (1)	40. (1)
41. (1)	42. (1)	43. (4)	44. (3)	45. (3)
46. (1)	47. (3)	48. (2)	49. (3)	50. (3)
51. (3)	52. (2)	53. (2)	54. (4)	55. (3)
56. (2)	57. (2)	58. (3)	59. (3)	60. (1)
61. (1)	62. (1)	63. (1)	64. (4)	65. (3)
66. (2)	67. (4)	68. (2)	69. (1)	70. (1)
71. (1)	72. (1)	73. (1)	74. (4)	75. (3)
76. (1)	77. (1)	78. (3)	79. (2)	80. (1)
81. (4)	82. (1)	83. (3)	84. (1)	85. (3)
86. (1)	87. (3)	88. (2)	89. (1)	90. (1)
91. (2)	92. (4)	93. (3)	94. (4)	95. (1)
96. (3)	97. (4)	98. (4)	99. (3)	100. (2)
101. (2)	102. (3)	103. (2)	104. (2)	105. (2)
106. (4)	107. (2)	108. (3)	109. (3)	110. (1)
111. (3)	112. (3)	113. (4)	114. (3)	115. (4)
116. (1)	117. (1)	118. (3)	119. (3)	120. (1)
121. (1)	122. (2)	123. (1)	124. (2)	125. (1)
126. (1)	127. (3)	128. (1)	129. (1)	130. (3)
131. (4)	132. (4)	133. (2)	134. (2)	135. (2)
136. (4)	137. (3)	138. (2)	139. (3)	140. (2)
141. (4)	142. (3)	143. (4)	144. (2)	145. (2)
146. (1)	147. (3)	148. (2)	149. (2)	150. (3)
151. (3)	152. (4)	153. (3)	154. (4)	155. (4)
156. (1)	157. (3)	158. (2)	159. (3)	160. (3)
161. (4)	162. (2)	163. (4)	164. (3)	165. (1)
166. (4)	167. (2)	168. (2)	169. (1)	170. (1)
171. (2)	172. (2)	173. (2)	174. (3)	175. (4)
176. (2)	177. (4)	178. (2)	179. (3)	180. (2)

SOLUTIONS

1. (2)

$$v = G^\alpha M^b R^c$$

$$LT^{-1} = [M^{-1}L^3T^{-2}]^\alpha [M]^b [L]^c$$

$$M^0L^1T^{-1} = M^{-\alpha+b}L^{3\alpha+c}T^{-2\alpha}$$

Comparing powers of M, L and T

$$-\alpha + b = 0$$

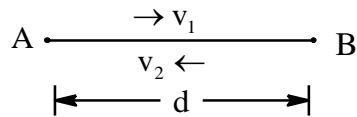
$$3\alpha + c = 1$$

$$-2\alpha = -1 \Rightarrow \alpha = \frac{1}{2}, b = \frac{1}{2}, c = -\frac{1}{2} \text{ OR}$$

$$\text{Orbital velocity } v = \sqrt{\frac{GM}{R}}, v = G^\alpha M^b R^c$$

If we know the formula, we can compare it directly, there is no need to calculate.

2. (4)



$$\text{Average speed} = \frac{d+d}{d/v_1 + d/v_2} = \frac{2v_1v_2}{v_1+v_2}$$

3. (4)

$$v = u - gt = u - 10t$$

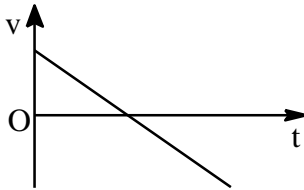
v - t graph

$$y = u - 10x \text{ (straight line)}$$

$$y = c + mx$$

Slop: m - 10, i.e., -ve

C = u, i.e., +ve



4. (2)

Let θ be the angle between \vec{A} and \vec{B}

$$|\vec{A} + \vec{B}| = n|\vec{A} - \vec{B}| \Rightarrow \sqrt{A^2 + B^2 + 2AB \cos \theta}$$

$$= n\sqrt{A^2 + B^2 + 2AB \cos (180 - \theta)}$$

$$|\vec{A}| = |\vec{B}| = A = B = x$$

$$2x^2 (1 + \cos \theta) = n^2 \cdot 2x^2 (1 - \cos \theta)$$

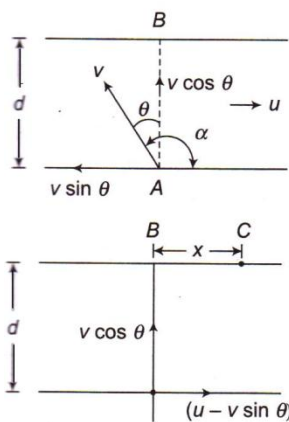
$$1 + \cos \theta = n^2 - n^2 \cos \theta$$

$$(1 + n^2) \cos \theta = n^2 - 1$$

$$\cos \theta = \frac{n^2 - 1}{n^2 + 1}$$

$$\theta = \cos^{-1} \left(\frac{n^2 - 1}{n^2 + 1} \right)$$

5. (3)



$$y: d = v \cos \theta t \Rightarrow t = \frac{d}{v \cos \theta}$$

$$x: x = (u - v \sin \theta)t = (u - v \sin \theta) \frac{d}{v \cos \theta}$$

$$= \left(\frac{u}{v} \sec \theta - \tan \theta \right) d$$

For x to be minimum

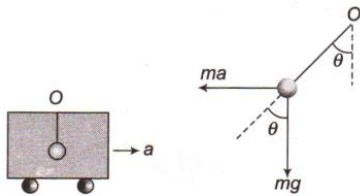
$$\frac{dx}{d\theta} = d \left(\frac{u}{v} \sec \theta \tan \theta - \sec^2 \theta \right) = 0$$

$$\frac{u}{v} \tan \theta = \sec \theta$$

$$\sin \theta = \frac{v}{u}$$

$$\alpha = 90^\circ + \theta = \frac{\pi}{2} + \sin^{-1} \left(\frac{v}{u} \right)$$

6. (1)



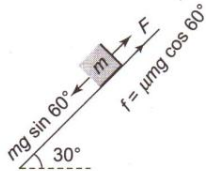
$$\tan \theta = \frac{ma}{mg} = \frac{a}{g}$$

$$\theta = \tan^{-1}(a/g)$$

7. (2)

$$mg \sin 30^\circ = \mu mg \cos 30^\circ$$

$$\Rightarrow \mu = \tan 30^\circ = \frac{1}{\sqrt{3}}$$

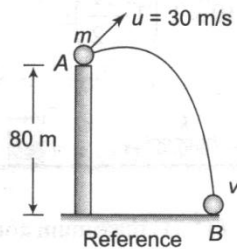


$$mg \sin 60 = F + \mu mg \cos 60^\circ$$

$$3 \times 10 \times \frac{\sqrt{3}}{2} = F + \frac{1}{\sqrt{3}} \times 3 \times 10 \times \frac{1}{2}$$

$$F = 15\sqrt{3} - 5\sqrt{3} = 10\sqrt{3} \text{ N}$$

8. (1)



$$K_A + U_A = K_B + U_B$$

$$\frac{1}{2} m(30)^2 + mg(80) = \frac{1}{2} mv^2 + 0$$

$$v = [(30)^2 + 2g(80)]^{1/2}$$

$$= 50 \text{ m/s}$$

9. (2) When the velocity (either magnitude or direction or direction or both) changes, acceleration is produced.

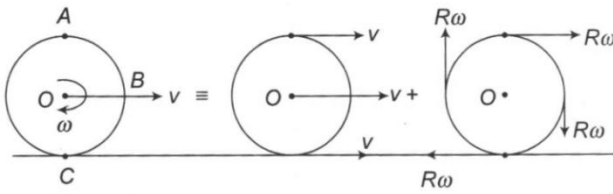
10. (3)

$$11. (2) \Delta\omega = 600 \text{ rev / min} = \frac{2\pi \times 600}{60} = 20\pi \text{ rad / s}$$

12. (2)

When a body rolls without slipping, the velocity of any point of the body is resultant of two velocities; one due to pure translational motion and another due to pure rotational motion. Also,

$$v = r\omega$$



$$v_A = v + R\omega = v + v = 2v$$

$$v_B = \sqrt{v^2 + (r\omega)^2} = \sqrt{2}v$$

$$v_C = v - v = 0$$

13. (3)

r : distance from centre of earth

R_e : radius of earth

$$r \leq R_e, g' = \frac{gr}{R_e} \Rightarrow g' \propto r \text{ (straight line)}$$

$$r \geq R_e, g' = \frac{gR_e^2}{r^2} \Rightarrow g' \propto \frac{1}{r^2} \text{ (rectangular hyperbola type)}$$

14. (3)

Tension \propto length in length

Let L_0 : natural length

$$T_1 \propto (L_1 - L_0)$$

$$T_2 \propto (L_2 - L_0)$$

$$\frac{T_1}{T_2} = \frac{L_1 - L_0}{L_2 - L_0}$$

$$\frac{T_1}{T_2} = \frac{L_1 - L_0}{L_2 - L_0}$$

$$T_1 L_2 - T_1 L_0 = T_2 T_1 - T_2 L_0$$

$$(T_1 - T_2)L_0 = T_1 L_2 - T_2 L_1$$

$$L_0 = \frac{T_1 L_2 - T_2 L_1}{T_1 - T_2} = \frac{L_1 T_2 - L_2 T_1}{T_2 - T_1}$$

15. (3)

16. (3)

$$f_B = 512 \text{ Hz}, f_A = 512 \pm 5 = 517 \text{ or } 507 \text{ Hz}$$

If arms of A is filed, f_A : \uparrow neat frequency \uparrow ,

$$f_A = 517 \text{ Hz}$$

17. (3) Theory

18. (3)

Answer (3)

$$VP^2 = \text{constant} \quad \dots (i)$$

As $PV = RT \Rightarrow P = \frac{RT}{V}$. Thus from (i)

$$\frac{VR^2T^2}{V^2} = \text{constant} \Rightarrow \frac{T^2}{V} = \text{constant}$$

$$\frac{T_2^2}{2V} = \frac{T^2}{V} \Rightarrow T_2 = T\sqrt{2}$$

19. (2)

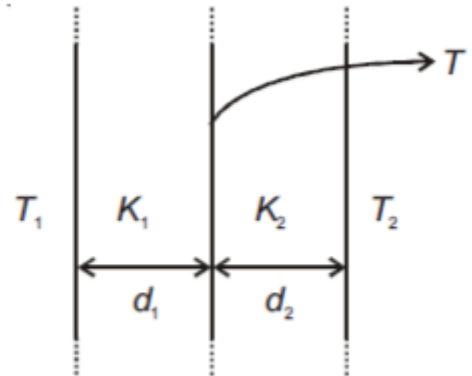
Answer (2)

Heat flow across both the walls will be same.

$$\frac{K_1 A}{d_1} (T - T_1) = \frac{K_2 A}{d_2} (T_2 - T)$$

$$K_1 T d_2 - K_1 T_1 d_2 = K_2 T_2 d_1 - K_2 T d_1$$

$$T = \frac{K_1 T_1 d_2 + K_2 T_2 d_1}{K_1 d_2 + K_2 d_1}$$



20. (3) Theory

21. (3)

22. (2)

$$\lambda_m T_1 = \lambda'_m T_2$$

$$\lambda_m \times 2000 = \lambda'_m \times 3000$$

$$\lambda'_m = \frac{2}{3} \lambda_m$$

23. (3)

24. (4)

25. (1)

26. (3)

27. (2)

$$\begin{aligned} \text{We know that, } r &= \frac{(I_1 - I_2)}{I_2} \times R = \frac{50 - 40}{40} \times 2 \\ &= 0.50 \Omega \end{aligned}$$

28. (4)

The two resistances are connected in series and the resultant is connected in parallel with the third resistance.

$$\therefore R = 4\Omega + 4\Omega = 8 \text{ and } \frac{1}{R''} = \frac{1}{8} + \frac{1}{4} = \frac{3}{8} \text{ or } R'' = \frac{8}{3} \Omega$$

29. (2)

Answer (2)

$$3 = \frac{E_1 + E_2}{R + r_1 + r_2}$$

$$1 = \frac{E_1 - E_2}{R + r_1 + r_2}$$

$$3 = \frac{E_1 + E_2}{E_1 - E_2}$$

$$2 = \frac{E_1}{E_2}$$

30. (4)

Power $P = 60$ W and voltage $V = 220$ volts. Resistance of the filament

$$R = \frac{V^2}{P} = \frac{(220)^2}{60} = 807 \Omega$$

31. (4)

$\vec{F} = -e\vec{E}$ here electric field is directed along + y-axis, then force on the electron is directed along -y-axis.

32. (2)

$$B_1 = \frac{\mu_o i}{4\pi R} (\sin \alpha + \sin \beta)$$

Here $R = a/2$; $\alpha = \beta = 45^\circ$

$$\therefore B_1 = \frac{\mu_o i}{2\pi a} (\sin 45^\circ + \sin 45^\circ)$$

$$B_1 = \frac{\mu_o i}{\sqrt{2} \pi a}$$

(directed perpendicular to the paper and into it)

Since, the centre of the square is equidistant from all the sides of the square current loop, each side produces same magnetic field at O in the same direction.

Therefore, resultant magnetic field at O

$$B = 4B_1 = \frac{4\mu_o i}{\sqrt{2} \pi a} = \frac{2\sqrt{2} \mu_o i}{\pi a}$$

33. (2)

Answer (2)

$$\epsilon = nB\pi r^2 \frac{dB}{dt}$$

$$\epsilon' = 4nB\pi \left(\frac{r}{2}\right)^2 \frac{dB}{dt}$$

$$\epsilon' = nB\pi r^2 \frac{dB}{dt} = \epsilon$$

$$P' = \frac{(\epsilon')^2}{R} = \frac{\epsilon^2}{R}$$

34. (4)

$$e = 200 \sin 100\pi t$$

$$\therefore e_0 = 200, \omega = 100\pi$$

$$BAN\omega = e_0$$

$$\therefore B = \frac{e_0}{AN\omega} = \frac{200}{(0.25 \times 0.25) \times 1000 \times 100\pi} \text{ or } B = 0.01 \text{ T}$$

35. (1)

36. (1)

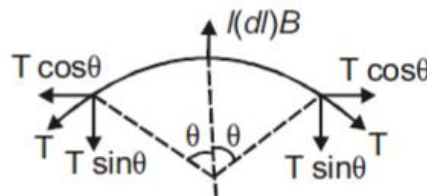
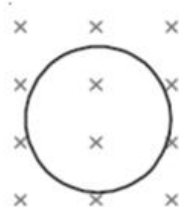
Answer (1)

$$\Rightarrow I(dl)B = 2T \sin \theta$$

$$I(dl)B = 2T \theta$$

$$I(R(2\theta)B) = 2T \theta$$

$$T = BIR$$



37. (2)

When the light is incident at the polarizing angle on the transparent medium, the reflected light is completely polarized.

38. (3)

$$\frac{f_a}{f_e} = \frac{\left(\frac{\mu_s}{\mu_l} - 1\right)}{\left(\mu_g - 1\right)} = \frac{\left(\frac{1.5}{1.25} - 1\right)}{1.5 - 1} = \frac{\frac{1}{5}}{\frac{1}{2}} = \frac{2}{5}$$

$$f_e = \frac{5}{2} f_a = \frac{5}{2} \times 2 = 5 \text{ cm}$$

39. (1)

Focal length of convex lens $f_1 = 25 \text{ cm}$

Focal length of concave lens $f_2 = -25 \text{ cm}$

Power of combination in dioptries,

$$p = p_1 + p_2 = \frac{100}{f_1} + \frac{100}{f_2} = \frac{100}{25} - \frac{100}{25} = 0$$

40. (1)

$$W_o = \frac{hc}{\lambda_o} = \frac{6.63 \times 10^{-34} \times 3 \times 10^8}{5000 \times 10^{-10}}$$

$$4 \times 10^{-19} \text{ J}$$

41. (1)

42. (1) Photoelectric current is directly proportional to the intensity of incident light.

43. (4)

44. (3)

For NAND gate,
 $\overline{0.1} = \overline{0} = 1$

45. (3)

Answer (3)

$$Y_n = \frac{nD\lambda}{d}$$

$$Y_n = 10^{-3} \text{ m}, \quad D = 0.5 \text{ m}, \quad d = 0.5 \times 10^{-3} \text{ m}$$

$$\lambda = \frac{500}{n} \text{ nm}$$

46. (1)

$$\frac{-d[\text{N}_2\text{O}_5]}{dt} = \frac{1}{2} \frac{d[\text{NO}_2]}{dt} = \frac{2d[\text{O}_2]}{dt}$$

$$\therefore k_1[\text{N}_2\text{O}_5] = \frac{k_2}{2}[\text{N}_2\text{O}_5] = 2k_3[\text{N}_2\text{O}_5]$$

47. (3)

According to Werner's theory, only those ions are precipitated which are attached to the metal atoms with ionic bonds and are present outside the coordination sphere.

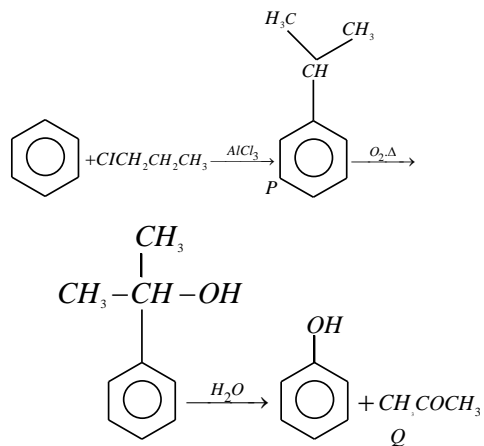
48. (2)

49. (3)

$$K_c = \frac{[\text{NO}_2]^2}{[\text{N}_2\text{O}_4]} = \frac{[2 \times 10^{-3} / 2]^2}{\left[\frac{0.2}{2}\right]} = 1 \times 10^{-5}$$

50. (3) PbS is black and S^{2-} reacts with $\text{K}_2\text{Cr}_2\text{O}_7$ to give $\text{Cr}_2(\text{SO}_4)_3$ solution which is green.

51. (3)



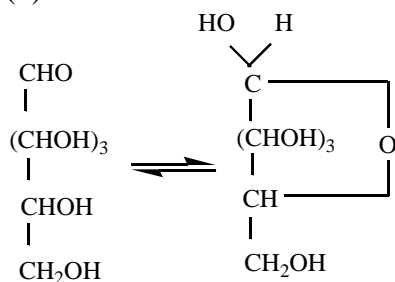
52. (2)

53. (2)

$$E_{\text{cell}} = \frac{0.059}{2} \log \frac{[H^+]_{\text{RHS}}^2 \times P_{H_2(\text{LHS})}}{P_{H_2(\text{RHS})} \times [H^+]_{\text{LHS}}^2}$$

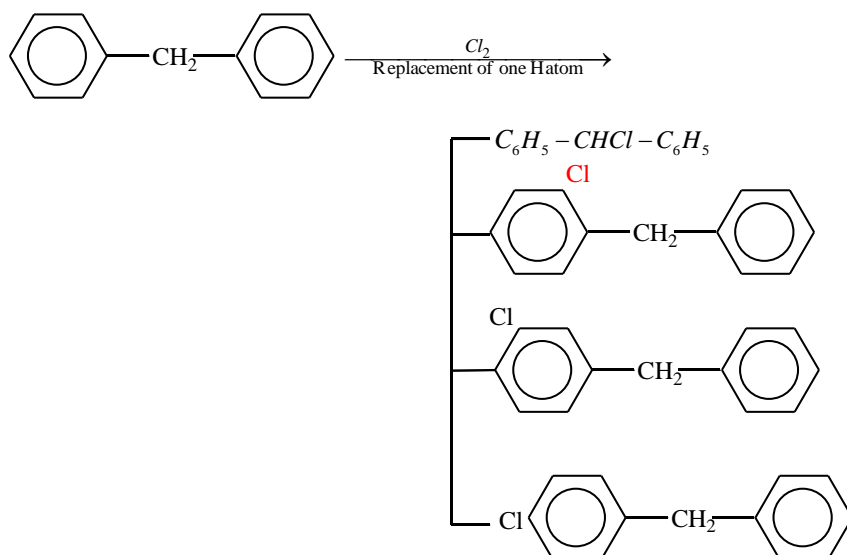
Thus, for positive E_{cell} , $P_{H_2(\text{LHS})} > P_{H_2(\text{RHS})}$

54. (4)



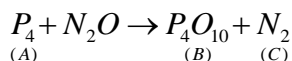
55. (3) Conceptual

56. (2)



57. (2) DNA has deoxyribose sugar; RNA has ribose sugar with three bases common as adenine, guanine and cytosine, DNA has fourth base thymine; RNA has uracil
58. (3) This gives rise to higher effective nuclear charge in Na^+ and the size of Na^+ becomes smaller due to more effective pull of valence shells towards nucleus.
59. (3) In D-(+)-tartaric acid, the (+) is due to positive optical rotation and is derived from D-(+)-glyceraldehyde.
60. (1) Bakelite is a step-growth polymer i.e., the condensation involving the reaction of functional group e.g., terylene, Bakelite etc.

61. (1)



62. (1)

63. (1)

$$28 \text{ g } N_2 = 1 \text{ mol of } N_2$$

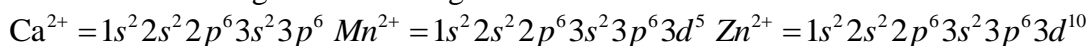
$$\text{Applying, } pV = nRT$$

$$2.46 \times 10 = 1 \times 0.0821 \times T$$

$$T = 299.6 \text{ K}$$

64. (4)

the electronic configuration of the given ion is as

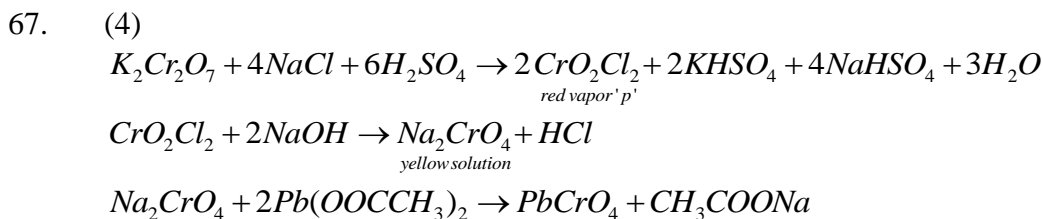


Thus the size of Zn^{2+} ion is smallest and of Ca^{2+} is largest among the three due to increase in effective nuclear charge with increase in atomic number. Smaller the size of ion, lighter is the hydration enthalpy. Thus, the order of hydration enthalpy is $Zn^{2+} > Mn^{2+} > Ca^{2+}$.

(2047 kJ mol⁻¹) (1841 kJ mol⁻¹) (1577 kJ mol⁻¹)

65. (3)

66. (2)



68. (2)

69. (1)

$$\text{Molality (m)} = \frac{\text{mass of solute (in g)} \times 1000}{\text{molecular weight of solute} \times \text{mass of solvent (in g)}}$$

$$= \frac{200 \times 10^{-3} \times 1000}{60 \times 40} = 0.0833$$

70. (1) Conceptual

71. (1)

72. (2)

$$\text{Rate} = k[A][B] = r_1$$

when, $[B] = [2B]$, then,

$$\text{new rate} = k[A][2B] = r_2$$

Divide Eq. (ii) by (i) to get,

$$\frac{r_2}{r_1} = \frac{k[A][2B]}{k[A][B]} \Rightarrow \frac{r_2}{r_1} = 2$$

$$r_2 = 2r_1$$

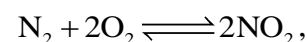
Hence, the rate doubles on doubling the concentration of B, thus we can say the value of rate constant is also doubled

[as rate constant depends upon the rate of the reaction].

73. (1) BI_3 is strong Lewis acid among Borontrihalides as backbonding between B and I is weak.

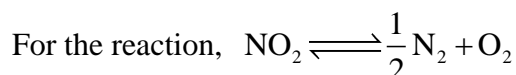
74. (4)

75. (3)



K_C for the reaction,

$$K_C = \frac{[NO_2]^2}{[N_2][O_2]^2}$$



$$K_{C_1} = \frac{[N_2]^{1/2}[O_2]}{[NO_2]}$$

Hence, $K_{C_1} = \frac{1}{\sqrt{K_C}}$ (given, $K_C = 100$)

So, $K_{C_1} = \frac{1}{\sqrt{100}} = 0.1$

76. (1) Due to lanthanide contraction, left to right atomic size decreases

77. (1)

78. (3)

0.1 F Liberates 0.1 equivalents of O_2 at anode and 0.1 equivalents of Ag at Cathode

$$\therefore \text{Total loss} = (0.1)8 + (0.1) 108 = 11.6\text{g}$$

$$\therefore \text{Wt. of final solution} = 108 - 11.6 = 96.4\text{g}$$

79. (2)

X is borazine. it is also called as inorganic benzene or borazole. It is isostructural and isoelectronic with benzene.

80. (1)

81. (4)

$$\Delta T_f = K_f \cdot m$$

$$\Rightarrow 0.93 = 1.86 \times \frac{36}{M} \times \frac{1}{1.2}$$

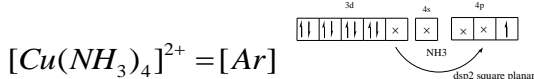
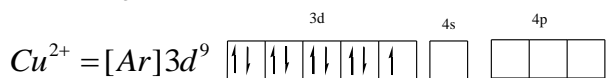
$$\Rightarrow M = 60$$

$$\therefore n = \frac{60}{30} = 2$$

$$\therefore \text{m.f} = (\text{CH}_2\text{O})_2$$

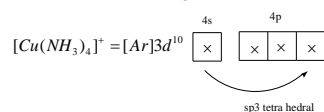
82. (1)

$[\text{Cu}(\text{NH}_3)_4]^{2+}$ contains Cu^{2+} ion



NH_3 being a strong field ligand transfer the unpaired electron to 4d orbital.

In $[\text{Cu}(\text{NH}_3)_4]^+$, Cu is present as Cu^+ ion.



Completely filled orbitals are highly stable, so NH_3 ligand occupy 4s and 4p orbitals.

83. (3)

84. (1)

1 mole of CO_2 molecule = 6.023×10^{23} molecule of CO_2

$$= 44 \text{ g of } \text{CO}_2$$

$$\therefore 10^{21} \text{ molecules of } \text{CO}_2 = \frac{44}{6.023 \times 10^{23}} \times 10^{21} \text{ g } \text{CO}_2$$

$$= 7.31 \times 10^{-2} \text{ g} = 73.1 \text{ mg}$$

$$\therefore \text{CO}_2 \text{ left} = 200 - 73.1 = 126.9 \text{ mg}$$

$$\text{Hence, moles of } \text{CO}_2 \text{ left} = \frac{\text{given mass}}{\text{molar mass}}$$

$$= \frac{126.9 \times 10^{-3}}{44} = 2.88 \times 10^{-3} \text{ mol}$$

85. (3) Conceptual

86. (1)

87. (3)

Equal masses of H_2 , O_2 and CH_4 are taken in volume V of container,

Volume of gas \propto number of moles (Avogadro's law)

Volume of H_2 : Volume of O_2 : Volume of CH_4

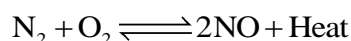
$$= \frac{w}{2} : \frac{w}{32} : \frac{w}{16} \quad (M_{\text{H}_2} = 2, M_{\text{O}_2} = 32, M_{\text{CH}_4} = 16)$$

$$= 16 : 1 : 2$$

88. (2)

89. (1) HCOOH is the strongest among the given acids, as HCOO^- ion is more stable as it has two equivalent resonance structures.

90. (1)



$$\Delta n_g = n_p - n_R \quad \text{or} \quad 2 - 2 = 0$$

When the number of moles of gaseous reactants and products is same, then equilibrium is not affected by pressure and hence, the equilibrium constant is unaffected.

91. (2) NCERT (XI pg.no.249)

Spraying juvenile conifers with GA hastens the maturity period leading to early seed production

92. (4) NCERT XI (pg. no. 166)

93. (3) NCERT (XII pg.no. 74)

94. (4) Ecosystem comprises of all producer, Consumer, Decomposer

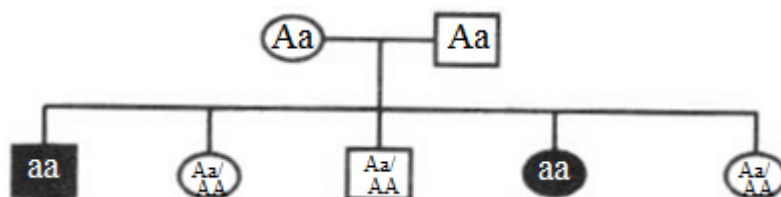
95. (1) Cypselia and Caryopsis both are Dry indehiscent fruit with Bicarpellary and Monocarpellary ovary respectively. Cremocarp is Schizocarpic fruit and Drupe is Fleshy fruit

96. (3) NCERT XII pg.no.176

Atlas 66 variety of wheat has high protein content.

97. (4) Majority of Pteridophytes are homosporus except a few like *Sellaginella* and *Salvinia* which produce two types of spores. All spermatophytes like gymnosperms and angiosperms always are heterosporus. (not mentioned in NCERT)

98. (4)



Attached ear lobe is a recessive character. It is not seen in any of the parents but is shown by 2 of 5 progeny.

99. (3) NCERT XI (pg no. 27)

- 100 (2) NCERT (XI pg.no.220)
 101 (2) (Not given in NCERT) Tapetum is responsible for formation of callase enzyme.
 102 (3) *Streptomyces erythreus* and *streptomyces venezuelae* are involved in production of erythromycin and chloramphenicol, respectively.
 103 (2) NCERT XII Pg.no. 263
 104 (2) NCERT (XIIpg.no.99)
 105 (2) NCERT (XI pg.no.231)
 106 (4) NCERT XI (Pg. no.5)
 107 (2) Sap vacuoles are responsible for the osmotic regulation
 108 (3) NCERT (XIIpg.no. 6)
 109 (3)

C ₃ plants- <i>Triticum</i>
C ₄ Plants-Maize
CAM plants- <i>Kalanchoe</i>

- 110 (1) NCERT (XI pg.no. 97)
 111 (3) Nitrogen bases like A,T,G,C are variable part of DNA
 112 (3) Streptococcus is a prokaryote (cocci) while all others are eukaryotes
 113 (4) 1953-discovery of structure of DNA.
 114 (3) NCERT (XI pg. no. 219)
 115 (4) NCERT XII (pg.no.235)
 116 (1) NCERT XI Pg.no.136
 Centrioles : forms the basal body of cilia and flagella, Ribosomes: Both chloroplast and mitochondria have 70S type of ribosome while Lysosomes are optically active at acidic pH
 117 (1) NCERT XI (Pg. no. 21)
 118 (3) NCERT (XIIpg.no.31)
 119 (4) NCERT (XI pg. no. 86, 87, 88)
 120 (1) NCERT (XI pg. no. 35)
 121 (1) NCERT (XII pg.no. 117) - Regulation of lac operon by repressor is referred to as negative regulation
 NCERT (XII pg.no. 118) - The human genome has approximately 20,000 to 25,000 genes
 122 (2) NCERT XI (pg.no.233)
 123 (1) NCERT (XI pg.no.74) - (i) *Cassia*-Imbricate aestivation
 NCERT (XI pg.no.74) - (ii) Lady finger- Twisted aestivation
 NCERT (XI pg.no.74) - (iii) *Calotropis*- Valvate aestivation
 NCERT (XI pgno.75) - (iv) Lily- Epiphylous stamens
 NCERT (XI pg.no.71) - (vi) Silk cotton- Palmately compound leaf
 124 (2) NCERT (XI pg.no. 197)
 125 (1) NCERT (XIIpg. no. 39)
 126 (1) NCERT XI (pg. no. 168)
 127 (3) NCERT XII (pg.no. 232)
 128 (1) NCERT (XI pg.no.243)
 129 (1) NCERT (XI pg.no. 67,68)
 130 (3) NCERT (XIIpg.no.85)
 131 (4) NCERT (XI pg.no.232)
 132 (4) NCERT XII (pg.no.247)
 133 (2) (i) *Usnea* - q. Fruticose lichen
 (ii) *Ustilago* - r. Basidiomycetes
 (iii) *Aspergillus* - s. Ascomycetes
 (iv) *Colletotrichum* - p. Deuteromycetes

134. (2) The nutrient medium is barley malt for beer, potato for vodka, fermented cereals for whiskey and molasses for rum.
135. (2) NCERT (XI pg.no.81)
136. (4) NCERT XII pg.no.265
137. (3) NCERT XI pg.no. 203
138. (2) NCERT XII (pg.no.35)
139. (3) NCERT XII (pg.no.276)
140. (2) NCERT XII (pg.no.276)
141. (4) Ctenophore exhibit only sexual reproduction.
142. (3) NCERT XII pg 48
143. (4) NCERT XI pg 52
144. (2) NCERT XII pg 43
145. (2) NCERT XII pg 53
146. (1) Mitosis
147. (3) NCERT XI pg 57
148. (2)
149. (2) NCERT XI pg 103
150. (3) NCERT XII pg 64
ICSI stands for Intra cytoplasmic sperm injection
151. (3) Metathoracic wings are used in flying
152. (4) NCERT XII pg 54
Oxytocin initiates uterine contraction
153. (3) NCERT XI pg 150
154. (4) NCERT XI pg 130
Brain of vertebrates are homologous
155. (4) NCERT XI pg 153
156. (1) Presence of tail in newly born human baby is ATAVISM
Repearance of tail in human child is an example of atavism
157. (3)
158. (2) NCERT XII pg 136 - 137
159. (3) Nuclease is a part of pancreatic juice.
160. (3) NCERT XII pg 150
Gambusia is larvicidal fish and used to control malaria.
161. (4)
162. (2) NCERT XII pg 152
163. (4) NCERT XI pg 269
164. (3) NCERT XII pg 157
165. (1) NCERT XI pg 275
166. (4) NCERT XI pg 158, 159
167. (2) First heart sound "lubb" produced due to the closure of AV valves.
168. (2)
169. (1) NCERT XI pg 288
170. (1) NCERT XII pg 204
171. (2) NCERT XI pg 293
172. (2)
173. (2) NCERT XI pg 298
174. (3)
175. (4) Excessive uric acid causes gout

176. (2) NCERT XI pg 331,332
177. (4)
178. (2) Hypothalamic hormones are stored in herring bodies
179. (3)
180. (2)