CLASSROOM CONTACT PROGRAMME
(Academic Session : 2023 - 2024)

ENTHUSIAST, LEADER & ACHIEVER COURSE

PHASE : ALL ENTHUSIAST, MLA, B, C, E,P, Q, R, S, T, U, V, MAZA, ZB, ZC, ZD, ZE, ZF, ZN, ZP, ZQ, ZR, ZV, ZX, ZY, ZK, MAPA, MAPB, MSP1, MSP2, LAKSHYA

TARGET : PRE-MEDICAL 2024

Test Type : **MAJOR** Test Pattern : **NEET (UG)**

TEST DATE : 31-03-2024

ANSWER KEY

Q.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
A.	4	3	4	3	4	4	4	1	3	4	3	4	4	1	3	1	1	1	2	2	3	1	4	1	3	2	3	2	2	4
Q.	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60
A.	2	4	4	1	1	2	2	4	1	4	1	2	4	3	1	2	4	1	4	2	3	2	1	3	1	1	3	1	2	4
Q.	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90
A.	2	4	1	2	2	3	4	4	2	4	1	3	1	1	4	4	3	1	4	2	4	3	4	3	4	2	3	4	4	4
Q.	91	92	93	94	95	96	97	98	99	100	101	102	103	104	105	106	107	108	109	110	111	112	113	114	115	116	117	118	119	120
A.	1	1	3	1	2	4	1	1	1	4	2	1	2	2	3	4	2	2	3	3	3	3	2	1	3	3	1	1	3	2
Q.	121	122	123	124	125	126	127	128	129	130	131	132	133	134	135	136	137	138	139	140	141	142	143	144	145	146	147	148	149	150
A.	1	3	3	3	1	4	1	1	4	2	2	3	3	3	1	4	4	3	2	4	1	3	1	1	2	3	2	4	2	1
Q.	151	152	153	154	155	156	157	158	159	160	161	162	163	164	165	166	167	168	169	170	171	172	173	174	175	176	177	178	179	180
A.	1	1	3	1	4	1	2	3	2	3	3	2	4	1	1	2	3	2	4	4	1	3	4	2	4	1	4	2	4	4
Q.	181	182	183	184	185	186	187	188	189	190	191	192	193	194	195	196	197	198	199	200										
A.	3	4	3	3	4	4	3	1	3	3	3	3	4	2	1	2	1	3	2	3										

HINT – SHEET

SUBJECT : BOTANY

SECTION-A

1. **Ans (4)**

NCERT-XI, Pg # 4

2. **Ans (3)**

XI NCERT Pg. No. # 6,7

3. **Ans (4)**

NCERT-XI Pg.#29

4. **Ans (3)**

XI NCERT Pg. No. # 128

5. **Ans (4)**

NCERT-XI, Pg # 19

6. **Ans (4)**

NCERT-XI, Pg # 20

7. **Ans (4)**

NCERT-XI, Pg # 20-21

8. **Ans (1)**

NCERT-XI, Pg.#23

9. **Ans (3)**

NCERT-XI, Pg # 23

10. **Ans (4)**

XI NCERT Pg. No. # 23, 24

11. **Ans (3)**

NCERT-XI, Pg # 22, 23

12. **Ans (4)**

NCERT-XI, Pg. # 26

13. **Ans (4)**

NCERT XI, Pg.# 186, 38

14. **Ans (1)**

NCERT-XI Pg.# 30

15. **Ans (3)**

NCERT-XI, Pg # 38, 39

16. **Ans (1)**

NCERT-XI Pg # 38

17. **Ans (1)**

NCERT-XI, Pg # 39

18. **Ans (1)**

NCERT-XI, Pg # 39

19. **Ans (2)**

NCERT-XI, Pg # 136

20. **Ans (2)**

NCERT XI - Page No. 137

21. **Ans (3)**

NCERT-XI, Pg # 131, 132

22. **Ans (1)**

NCERT-XI, Pg. # 139

23. **Ans (4)**

NCERT-XI, Pg # 135

24. **Ans (1)**

NCERT-XI, Pg # 168

25. **Ans (3)**

NCERT-XI, Pg # 169, 170

26. **Ans (2)**

NCERT-XI, Pg # 169

27. **Ans (3)**

NCERT (XI) Pg # 168

28. **Ans (2)**

NCERT-XI, Pg. # 163, 168, 169

29. **Ans (2)**

NCERT-XI, Pg # 144

30. **Ans (4)**

XI NCERT Pg. No :- 156, 157, 158, 159

31. **Ans (2)**

NCERT-XI, Pg # 158

32. **Ans (4)**

NCERT XI Page no.- 153

33. **Ans (4)**

NCERT-XI, Pg # 145

34. **Ans (1)**

NCERT-XI, Pg # 144

35. **Ans (1)**

NCERT-XI, Pg # 146

SECTION-B

36. **Ans (2)**

NCERT (XI) Pg # 09

37. **Ans (2)**

NCERT-XI, Pg # 17

38. **Ans (4)**

NCERT XI - P. No. - 33

39. **Ans (1)**

NCERT - XI Pg. No. - 35

40. **Ans (4)**

NCERT-XI, Pg. # 35-41

41. Ans (1)

NCERT XI Pg.# 34, 37

42. Ans (2)

NCERT XI Pg. # 138

43. Ans (4)

NCERT-XI, Pg. # 136

44. Ans (3)

NCERT-XI, Pg # 132

45. Ans (1)

NCERT-XI, Page No. 165, 166, 169

46. Ans (2)

NCERT-XI, Pg # 170

47. Ans (4)

XI NCERT Pg # 166

48. Ans (1)

NCERT XI Pg : 111-112

49. Ans (4)

NCERT-XI, Pg # 156

50. Ans (2)

NCERT-XI, Pg # 146

SUBJECT : ZOOLOGY

SECTION-A

52. Ans (2)

NCERT XI Page No. 47 : Fig. 4.1a

58. Ans (1)

NCERT Pg. # 53

59. Ans (2)

NCERT Pg # 52

61. Ans (2)

NCERT Pg.#50 Figure-4.6(a,b), Para-4.2.2

62. Ans (4)

NCERT XI, Page # 103

67. Ans (4)

NCERT Pg.#114 (E), 116 (H)

71. Ans (1)

NCERT-XI Pg. # 119

72. Ans (3)

NCERT-XI , Pg# 285

80. Ans (2)

NCERT, Pg. # 272

81. Ans (4)

NCERT Page No. # 270

83. Ans (4)

NCERT-XI, Pg. # 297

SECTION-B

88. Ans (4)

NCERT–XI, Pg. # 54

89. Ans (4)

Module Nurture-2, Pg # 88

90. Ans (4)

NCERT-XI Pg.# 103

91. Ans (1)

NCERT Pg.#112 (E), 113 (H)

94. Ans (1)

NCERT XI Pg # 288

97. Ans (1)

NCERT, Pg. # 275

100. Ans (4)

NCERT Pg. No. # 291

SUBJECT : PHYSICS

SECTION-A

101. Ans (2)

$\ell\theta = R\phi$

$\theta = \dfrac{(1)(0.8)}{200} = 0.004\,\text{rad}$

102. Ans (1)

$P.E. = \dfrac{1}{2}F\Delta\ell$

$= \dfrac{1}{2}(200)\left(10^{-3}\right) = 0.1\,J$

103. Ans (2)

$v = 3x^2 - 2x$

$a = v\dfrac{dv}{dx} = \left(3x^2 - 2x\right)(6x - 2)$

$a\,(x = 2) = 80\ m/s^2$

104. Ans (2)

$F = \dfrac{t^3}{bx^2} - \dfrac{a}{bx^2}$

$\left[\dfrac{a}{b}\right] = \left[Fx^2\right] = \left[ML^3T^{-2}\right]$

105. Ans (3)

30 VSD = 28 MSD

1 VSD = $\dfrac{28}{30}$ MSD

LC = 1MSD − 1VSD

LC = $\left(1 - \dfrac{28}{30}\right)$ MSD

0.1mm = $\dfrac{2}{30}$MSD

1 MSD = 1.5 mm

106. Ans (4)

Let $\bar{c} = 3\lambda\hat{i} + 4\lambda\hat{j}$

Now, $(3\lambda)^2 + (4\lambda)^2 = 7^2 + 24^2$

$\Rightarrow \lambda = 5$

$\therefore \bar{c} = 15\hat{i} + 20\hat{j}$.

107. Ans (2)

$\vec{A} \times \vec{B} \perp \vec{C}$

108. Ans (2)

$H_1 + H_2 = \dfrac{u^2\sin^2 30°}{2g} + \dfrac{u^2\sin^2 60°}{2g} = \dfrac{u^2}{2g}$

$= \dfrac{(20)^2}{2\,(10)} = 20\,m$

109. Ans (3)

$\vec{v}_b = \vec{v}_{br} + \vec{v}_r$

In direction of stream

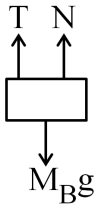
$t_1 = \dfrac{2}{5} = 0.4$ hr

Opposite to direction of stream

$t_2 = \dfrac{2}{1}hr = 2hr$

Total time = 2.4 hr

110. Ans (3)

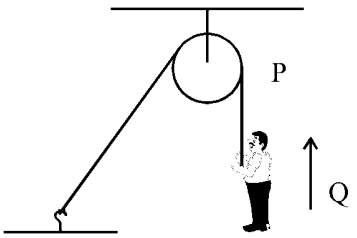


$M_Bg = T + N$

$M_Bg = 2g + 10 = 30$ N

$M_B = 3$ kg

111. Ans (3)



T = 840 N

T = m (g + a)

840 = 60 (10 + a)

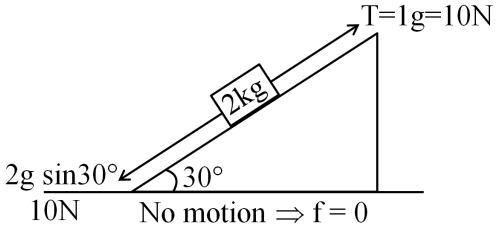
$\boxed{a = 4m/s^2}$

112. Ans (3)

$N - (5 + 2)g = (5 + 2)\, a$

$N = 7(10 + 5) = 105$ N

113. Ans (2)



114. Ans (1)

$P = \frac{dM}{dt} gh = 100 \times 10 \times 100$ W $= 100$ kW

115. Ans (3)

Displacement in verticle direction $= 0$

Work done by force of gravity $= 0$

116. Ans (3)

$\omega^2 R \le \mu g$

for coin to rotate with gromophone & fly away if ω increased or R increased or μ decreased, does not depend on mass of coin.

117. Ans (1)

$T \sin\theta = m R \omega^2$

$T \sin\theta = m(\ell \sin\theta)\omega^2$

$T = m\ell\omega^2$

118. Ans (1)

$\vec{F}_{ext} = \vec{0} \Rightarrow \vec{a}_{CM} = \vec{0} \Rightarrow \vec{V}_{CM} =$ constant

119. Ans (3)

$m_A v_A = -m_B v_B$

and $|m_A v_A| = |m_B v_B|$

K.E. $= \frac{p^2}{2m}$

K.E. $\propto \frac{1}{m}$.

120. Ans (2)

$\Delta KE = \frac{1}{2}\frac{m_1 m_2}{m_1 + m_2}(U_1 - U_2)^2$

$= \frac{1}{2}\frac{(2)(3)}{5}(10 - 0)^2 = 60$ J

121. Ans (1)

For complete disc with mass 4 M, moment of inertia about given axis $I = \frac{1}{2}(4M)R^2$

Hence, by symmetry for the given quarter of the disc $I' = \frac{I}{4} = \frac{1}{2}MR^2$

122. Ans (3)

net force is zero hence total linear momentum will remain zero as initialy it was at rest.

123. Ans (3)

$\vec{I}_{Total} = \vec{I}_1 + \vec{I}_2 = \vec{0} \Rightarrow \vec{I}_1 = -\vec{I}_2 \Rightarrow I_1 = I_2$

124. Ans (3)

$mg^1 = mg - m\omega^2 R\cos^2 60° = 0$

$\omega = 2\sqrt{\frac{g}{R}} = \frac{2\pi}{T}$

$T = \pi\sqrt{\frac{R}{g}}$

126. Ans (4)

From Kepler's law : Areal velocity = constant

So $\frac{\text{Area SCD}}{t_1} = \frac{\text{Area SAB}}{t_2} \Rightarrow t_1 = 2t_2$

127. Ans (1)

$Y = \frac{FL}{A\Delta\ell} = \frac{2000}{10^{-6} \times 10^{-3}} = 2 \times 10^{12}$ N/m^2

128. Ans (1)

$Mg = F_B$

$Mg = 10^3 \times (20 \times .4 \times 0.005)\, g$

$M = 40$ kg

129. Ans (4)

$P_A = P_B$

$P_0 + \rho_w g(6.8) = P_0 + \rho_{Hg}\, g(2x)$

$1 \times 6.8 = 13.6 \times 2x$

$1 = 4x$

$x = \frac{1}{4}$cm

$= 0.25$ cm

130. Ans (2)

$V = a\left(\sqrt{2gh}\right)$

$h = \frac{V^2}{2ga^2}$

131. Ans (2)

Reynold's number $(R_e) = \frac{\rho v d}{\eta}$

When $R_e < 1000$ type of flow is streamline or laminar for liquids lower density and higher viscosity with streamline or laminar flow is more probable.

132. Ans (3)

$P_{in} - P_{out} = \frac{2T}{R}$

$P_{in} = P_{out} + \frac{2T}{R}$

$P_{in} = P_{atm} + \rho gd + \frac{2T}{R}$

133. Ans (3)

For soap bubble: Extension in area

$= 2 \times \left(4\pi r_2^2 - 4\pi r_1^2\right)$

$= 8\left[(0.2)^2 - (0.1)^2\right] = 0.24\pi m^2$

Work done W_1 = surface tension× extension in area $= 25 \times 10^{-3} \times 0.24\pi$

$= 6\pi \times 10^{-3}$J

134. Ans (3)

In the freely falling elevator g = 0 water will rise to fill the entire 30 cm length of the tube.

135. Ans (1)

$F = \eta A \frac{\Delta v}{\Delta y} = \frac{1 \times 200 \times 10^{-4} \times 5 \times 10^{-2}}{2 \times 10^{-3}}$

$= 0.5$ N

SECTION-B

136. Ans (4)

$\Delta V = at = 3a(8 - t)$

$\Rightarrow t = 6$ sec

137. Ans (4)

$[E] = [P]^x[A]^y[T]^z$

$\left[ML^2T^{-2}\right] = \left[MLT^{-1}\right]^x\left[L^2\right]^y[T]^z$

$x = 1$

$x + 2y = 2 \Rightarrow y = \frac{1}{2}$

$-x + z = -2 \Rightarrow z = -1$

$[E] = \left[PA^{\frac{1}{2}}T^{-1}\right]$

138. Ans (3)

$B \sin 60° = 10$ N

$\Rightarrow B = \frac{20}{\sqrt{3}}$ N

$C = B\cos 60° = \frac{20}{\sqrt{3}}\ \frac{1}{2} = \frac{10}{\sqrt{3}}$ N

139. Ans (2)

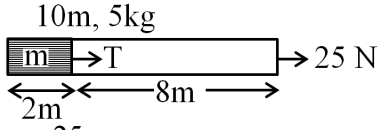
$\frac{U}{g} = 6 \Rightarrow U = 60$ m/s

$S_{1^{st}} = 60 - \frac{1}{2}(10)\,[2(1) - 1] = 55$ m

$S_{7^{th}} = 60 - \frac{1}{2}(10)\,[2(7) - 1] = -5$ m

$\frac{S_{1^{st}}}{S_{7^{th}}} = \frac{15}{5} = \frac{11}{1}$

140. Ans (4)



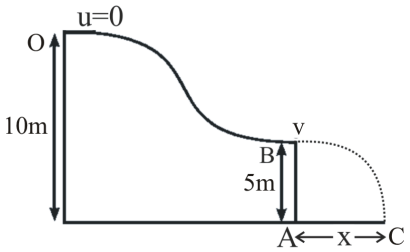
$a = \frac{25}{5} = 5 m/s^2$

$T = ma = (0.5 \times 2)\ 5 = 5\ N$

141. Ans (1)

For point O and B,

By energy conservation-



$mg\,(10) = mg\,(5) + \frac{1}{2}mv^2$

$\Rightarrow \quad v = 10\ m/s$

$\Rightarrow$ Now from B to C -

$\text{time of flight} = \sqrt{\frac{2H}{g}} = \sqrt{\frac{2(5)}{10}} = 1s$

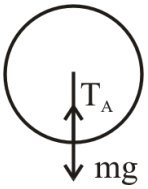
Range , $x = v(T) = 10\,m$

142. Ans (3)

In oscillation when body moves from extreme position to mean position the direction of force and velocity both remain in same direction so that speed increases and positive work is done on the body.

143. Ans (1)

T will be maximum at lowest point.



$T_A - mg = m\omega^2 r$

$30 - 0.5 \times 10 = 0.5\ \omega^2 \times 2$

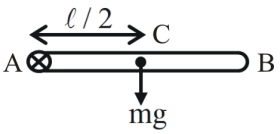
$25 = 1 \times \omega^2$

$5\ rad/sec = \omega$

144. Ans (1)

$$X_{CM} = \frac{\int_0^L \left(\frac{kx^2}{L}dx\right) x}{\int_0^L \frac{kx^2}{L}dx} = \frac{3}{4}L$$

145. Ans (2)



$\tau_H = I_H\,\alpha \Rightarrow mg \times \frac{\ell}{2} = \frac{m\ell^2}{3} \times \alpha$

$\Rightarrow \alpha = \frac{3g}{2\ell}$ (same for all points)

* Acceleration of C : $a_C = \alpha r = \frac{3g}{2\ell} \times \frac{\ell}{2} = \frac{3g}{4}$

Acceleration of B : $a_B = \alpha r = \frac{3g}{2\ell} \times \ell = \frac{3g}{2}$

146. Ans (3)

Loss in P.E. = Gain in K.E.

$Mg\frac{L}{2} = \frac{1}{2}\left(\frac{ML^2}{3}\right)\omega^2$

$\omega = \sqrt{\frac{3g}{L}}$

Velocity of other end $V = \omega L = \sqrt{3gL}$

$= \sqrt{3 \times 10 \times 1} \approx 5.4\ m/s$

147. Ans (2)

$L_i = L_f$

$mV_0R_0 = MV_0^1\frac{R_0}{2} \Rightarrow V_0^1 = 2V_0$

$K.E_f = \frac{1}{2}m(2V_0)^2 = 2mV_0^2$

148. Ans (4)

From conservation of energy

$mgh = \frac{1}{2}mv^2 + \frac{1}{2}Iw^2$

$mgh = \frac{1}{2}mv^2 + \frac{1}{2}\left(\frac{2}{5}mr^2\right)\omega^2$

$gh = \frac{7}{10}(\omega^2 r^2) \qquad \therefore v = \omega r$

$\frac{10gh}{7} = \omega^2 r^2$

$KE = \frac{1}{2}\left(\frac{2}{5}mr^2\right)\omega^2 = \frac{2mgh}{7}$

149. Ans (2)

$$V = \frac{2}{9n} r^2(\rho - \sigma)\, y$$

$$\frac{V}{10} = \frac{(7.8 - 1.2)}{13.2} \times \frac{8.5 \times 10^{-4}}{(7.8 - 1)} = \frac{1}{2} \times \frac{5}{4} \times 10^{-4}$$

$$V = 6.25 \times 10^{-4} \text{ cm } S^{-1}$$

150. Ans (1)

$$P + \frac{1}{2}\rho v^2 = \frac{P}{2} + \frac{1}{2}\rho v_1^2$$

$$v_1 = \sqrt{v^2 + \frac{P}{\rho}}$$

SUBJECT : CHEMISTRY

SECTION-A

151. Ans (1)

	C	H	N	O
% Mass	20	6.67	46.67	26.66
$\frac{\%\text{Mass}}{\text{A. M.}}$	$\frac{20}{12}$	$\frac{6.67}{1}$	$\frac{46.67}{14}$	$\frac{26.66}{16}$
	1.66	6.67	3.33	1.66
Ratio	1	4	2	1

Formula : CH_4N_2O

152. Ans (1)

(I) 0.5 mole O_3 = 24 g O_3;

(II) 0.5 g atoms of oxygen = 8 g

(III) $\frac{3.011 \times 10^{23}}{6.022 \times 10^{23}} \times 32 = 16$ g O_2

(IV) $\frac{5.6}{22.4} \times 44$ g $CO_2 = 11$ g CO_2

153. Ans (3)

3d: ↑ ↑ ↑ ↑ ↑ 4s: ↑↓

Follows all hund's rule and pauli's rule

154. Ans (1)

$$\lambda = \frac{h}{\sqrt{2m\,K.E.}}$$

$$K.E. \propto \frac{1}{\lambda^2}$$

$$\therefore \frac{KE_1}{KE_2} = \left(\frac{5}{3}\right)^2 = \frac{25}{9}$$

155. Ans (4)

$$\Delta x.\Delta p \geq \frac{h}{4\pi}$$

$$\Delta p \geqslant \frac{h}{4\pi m\,\Delta x}$$

If $\Delta x = 0$ then $\Delta p = \infty$

156. Ans (1)

$$\frac{E_2}{E_4} = \frac{(4)^2}{(2)^2}$$

$$\frac{-328}{E_4} = 4$$

$$\Rightarrow E_4 = \frac{-328}{4} = -82 \text{ kJ/mol}$$

157. Ans (2)

$P_{total} = 3.2$

$P_{NH_2} = P_{total} - (P_{N_2} + P_{H_2})$

$P_{NH_3} = 3.2 - (1.6 + 0.8)$

$P_{NH_3} = 0.8$ atm

$$K_p = \frac{P_{NH_3}^2}{P_{N_2}.P_{H_2}^3} = \frac{(0.8)^2}{1.6(0.8)^3}$$

$K_p = 0.78$

158. Ans (3)

Assuming initial pressure of AB is P_0

	AB ⇌	C +	D
	(g)	(g)	(g)
initial	P_0	0	0
eq.	$\frac{P_0}{2}$	$\frac{P_0}{2}$	$\frac{P_0}{2}$

$$K_p = \frac{(P_0/2) \times (P_0/2)}{(P_0/2)} = 2$$

$P_0 = 4$ atm

$$P_{total} = \frac{3P_0}{2} = 6 \text{ atm}$$

159. Ans (2)

For endothermic reaction as temp. increases,

equilibrium constant increases.

160. Ans (3)

$pH = 3 \Rightarrow [H^+] = C\alpha = 10^{-3}$

$\Rightarrow \alpha = 10^{-2}$

$\Rightarrow K_a = C\alpha^2 = 0.1 \times (10^{-2})^2 = 10^{-5}$

161. Ans (3)

K_{sp} of $AgCl = [Ag^+]\,[Cl^-]$

$1 \times 10^{-10} = [S]\,[S + 0.2 \text{ from } BaCl_2]$

$\Rightarrow 1 \times 10^{-10} = S \times 0.2$

$\Rightarrow S = 5 \times 10^{-10}$ M

162. Ans (2)

$FCH_2COOH + BOH \longrightarrow FCH_2COOB + H_2O$

10m mol	5m mol	0	0
5m mol	0m mol	5m mol	

For acidic buffer, $pH = pK_a + \log \dfrac{[Salt]}{[Acid]}$

$pK_a = -\log K_a$

163. Ans (4)

$\Delta S_{total} > 0$ for spontaneous process

164. Ans (1)

$H_2(g) + \dfrac{1}{2} O_2(g) \longrightarrow H_2O(g)\ ;\ \Delta H = -249$ kJ

$-249 = BE_{H-H} + \dfrac{1}{2} BE_{O=O} - 2BE_{O-H}$

165. Ans (1)

	H_2SO_4	KOH
Gram Eq.	$N \times V_{(L)}$	$N \times V_{(L)}$
	$\dfrac{200 \times 0.1 \times 2}{1000} = 0.04$	
	$\dfrac{150 \times 0.2 \times 1}{1000} = 0.03$	

$\Delta H = 0.03 \times (-57.2) = -1.7$ kJ

166. Ans (2)

$\Delta U = q + w$

$q = -124$ J

$w = -P_{ext}(V_2 - V_1)$

$w = \dfrac{-1520}{760}\left(\dfrac{-200}{1000}\right) \times 101.3$ J

$w = 40.52$ J

167. Ans (3)

$q_P = q_v + \Delta n_g RT$

$\because q_v = -28 - \dfrac{(1) \times 2 \times 300}{1000}$

$= -28.6$ kcal.mol^{-1}

168. Ans (2)

$C_3O_2 : 3x - 4 = 0 \Rightarrow x = \dfrac{4}{3}$

$Mg_2C_3 : 4 + 3x = 0 \Rightarrow x = -\dfrac{4}{3}$

169. Ans (4)

Balanced reaction

$8MnO_4^- + 3NH_3 \rightarrow 3NO_3^- + 8MnO_2 + 5OH^- + 2H_2O$

170. Ans (4)

$H_2S_2O_8$ S : +6

K_3CrO_8 Cr : +5

$Fe(CO)_5$ Fe : 0

$HClO_4$ Cl : +7

171. Ans (1)

Largest energy gap for given option is $(E_2 - E_1)$ required for transition.

173. Ans (4)

NCERT Pg. # 110

175. Ans (4)

NCERT Pg. # 107

176. Ans (1)

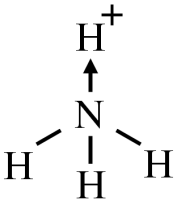
NCERT Pg. # 116

177. Ans (4)

NCERT XI Pg. # 123

178. Ans (2)

$NH_4Cl \rightarrow NH_4^+ + Cl^-$



180. Ans (4)

NCl_5, PH_5, $SiCl_6^{-2}$ does not exist

181. Ans (3)

IE $3s^1 < 2p^4 < 2p^5 < 2p^6$

182. Ans (4)

NCERT Pg. # 91

184. Ans (3)

Z = 118 = Og (ogenesson)

SECTION-B

186. Ans (4)

$C_xH_y \rightarrow xCO_2 + \frac{y}{2} H_2O$

0.5 L 2.5 L 3 L

$x = \frac{2.5}{0.5} = 5$

$\frac{y}{2} = \frac{3}{0.5} \Rightarrow y = 12$ $[C_5H_{12}]$

187. Ans (3)

NCERT

188. Ans (1)

Equilibrium will shift in the direction of higher number of moles of gases.

189. Ans (3)

NCERT Pg. # 217

190. Ans (3)

$C_{10}H_8(s) + 12O_2(g) \rightarrow 10CO_2(g) + 4H_2O(\ell)$

$\Delta n_g = 10 - 12 = -2$

$\Delta H = \Delta U + \Delta n_g RT$

191. Ans (3)

$C_{(s)} + 2H_{2(g)} \rightarrow CH_{4(g)}$

$\Delta_f H^o[CH_4, g]$

$= [\Delta H^\circ_{sub.}(C_{graphite}) + 2BE_{H-H}] - [4BE_{C-H}]$

192. Ans (3)

$-2 \quad 0$

$N_2H_4 \rightarrow N_2$

$v_f = 4$

$+5 \quad +1$

$IO_3^- \rightarrow ICl$

v.f. = 4

193. Ans (4)

(a) $\Delta n_g = -2$

(b) $\Delta n_g = 0$

(c) $\Delta n_g = -0.5 = -\frac{1}{2}$

(d) $\Delta n_g = \frac{1}{2}$

194. Ans (2)

By question $[H^+] = 10^{-6}$ M for water at 90°C

$\Rightarrow K_w = 10^{-12}$

pH for neutral solution at 90°C is 6.

195. Ans (1)

NCERT Pg. # 108

196. Ans (2)

NCERT Pg. # 129

197. Ans (1)

NCERT PAGE - 117

198. Ans (3)

NCERT, Pg. # 86

199. Ans (2)

NCERT Pg. # 90

200. Ans (3)

NCERT Pg. # 90