

CLASSROOM CONTACT PROGRAMME

(Academic Session: 2024 - 2025)

ENTHUSIAST COURSE

PHASE: ALL

TARGET: PRE MEDICAL 2025

Test Type: MAJOR Test Pattern: NEET (UG)

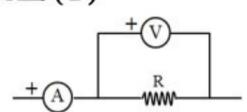
TEST DATE: 05-02-2025

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.	2	4	3	1	3	4	1	2	3	2	2	3	1	3	3	2	2	2	3	4	2	2	2	1	2	1	2	1	4	3
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.	3	1	2	3	2	2	2	3	1	2	1	4	4	4	1	2	4	2	2	1	4	4	2	1	4	1	4	1	1	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.	4	4	4	2	2	3	4	4	4	3	3	4	1	3	1	1	1	3	1	1	3	1	2	2	4	4	3	3	3	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.	3	1	3	4	2	1	1	3	2	1	3	2	3	2	4	4	3	2	2	2	1	1	3	4	2	3	1	3	3	1
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.	2	3	1	4	1	2	4	3	1	2	1	2	2	3	2	4	1	2	4	4	3	2	4	4	3	4	2	1	1	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	2	2	4	1	3	2	2	3	4	3	4	4	2	1	1	2	4	3	4	3	2	1	1	4	3	3	1	1	1

HINT - SHEET

1. Ans (2)



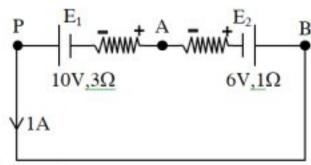
If voltmeter has resistance : R_v then, measured P.D. across 'R' = IR_{eq}

where
$$R_{eq} = \left(\frac{RR_V}{R + R_V}\right) < R$$

Hence
$$\frac{V_{\text{meas}}}{I} < R \Rightarrow \frac{3}{0.6} < R$$

 $\Rightarrow R > 5\Omega$.

2. Ans (4)



Simplified circuit

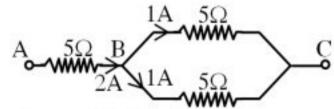
$$i = \frac{10-6}{3+1} = 1A$$

Applying KVL between A and B

$$V_B - 6 - (1 \times 1) = V_A$$

$$V_B - V_A = 7 V$$
.

3. Ans (3)



For each resistor: $I_{max}^2 R = P_{max}$

$$I_{max} = \sqrt{\frac{P_{max}}{R}} = \sqrt{\frac{20}{5}} = 2A$$

Each resistor can have maximum current of 2A, before it get damage. So maximum current in branch AB = 2A. These each resistor of branch BC will carry 1A as shown.

$$P_{\text{net}} = P_{AB} + P_{BC} = (2)^2 (5) + (2)(1)^2 (5) = 20 + 10 = 30 \text{W}.$$

4. Ans (1)

$$F_e = \frac{ke^2}{r^2} \quad F_g = \frac{Gm_e \cdot m_p}{r^2}$$
$$\frac{F_e}{F_g} = \frac{ke^2}{Gm_e \cdot m_p} \simeq 2.4 \times 10^{39}$$

5. Ans (3)

As the field is along x-direction, equipotential surface must be parallel to y-z plane and perpendicular to x-axis.

7. Ans (1)

Distance of a nth bright fringe from central fringe

$$y_n = \frac{n\lambda D}{d}$$

$$\therefore \lambda_{blue} < \lambda_{yellow}$$

$$\therefore y_{n(blue)} < y_{n(yellow)}$$

8. Ans (2)

This is a wheat stone bridge which is balanced hence circuit can be reduced to following

Ceq. =
$$\frac{8 \times 8}{8 + 8} = 4\mu F$$

$$4\mu F$$

$$4\mu F$$

$$4\mu F$$

$$4\mu F$$

$$4\mu F$$

$$4\mu F$$

9. Ans(3)

$$\frac{P_1}{P_2} = \frac{m_1 gh/t_1}{m_2 gh/t_2} = \frac{m_1/t_1}{m_2/t_2} = \frac{300/5}{50/2} = \frac{600}{250} = \frac{12}{5} = 2.4$$

10. Ans (2)

Minimum value of velocity of pendulum to desires a circle is:

$$v_2 = \sqrt{5gl} = \sqrt{100} = 10 \text{m/s}$$

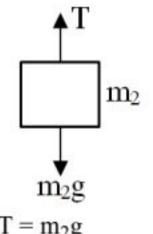
By linear momentum conservation,

$$mv_1 = -mv_1 + mv_2$$

 $50 \times 10^{-3} \text{ v} = -50 \times 10^{-3} \times 100 + 1 \times 10$

$$v = 100 \text{ m/s}$$

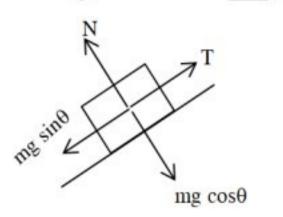
11. Ans (2)



$$T = m_2 g$$
 ___(1)

 $T = mg \sin\theta$

$$N = mg \cos\theta$$
 (2)



$$\sin \theta = \frac{m_2}{m_1} = \frac{6}{10}$$

$$\Rightarrow \theta = 37^{\circ}$$

from (3)

$$N = 10 \times 10 \times \cos 37^{\circ}$$

$$N = 80 \text{ N}$$

(force exerted by inclined on block m1)

12. Ans (3)

Speed of train A: $V_A = 1 \text{ km/hr}$

Speed of train B: $V_B = 2 \text{ km/hr}$

speed of person w.r.t. train A;

$$\Rightarrow$$
 V_{PA} = 0.2

$$\Rightarrow$$
 V_P - V_A = 0.2 \Rightarrow V_P = 1.2 km/hr

Rel. speed of person wrt train B;

$$V_{PB} = V_P + V_B = 1.2 + 2 = 3.2 \text{ km/hr}$$

13. Ans (1)

Average speed =
$$\frac{\text{Total distance}}{\text{total time}}$$

$$\frac{\left(\frac{0+30}{2}\right)t + (30)(2t)}{3t} = 25 \text{ km/hr}$$

$$E_i = 4\pi R^2 T$$
 ...(i)

$$\frac{4}{3}\pi R^3 = n\frac{4}{3}\pi r^3$$

$$E_f = n4\pi r^2 T$$

$$= n^{1/3} 4\pi R^2 T \dots (ii)$$

$$\Delta E = W = E_f - E_i$$

$$=4\pi R^2 T [n^{1/3}-1]$$

15. Ans (3)

$$\frac{F_T}{A} = n\phi$$

$$\phi = \frac{F}{A\eta} = \frac{1000}{(0.04)(2 \times 10^9)}$$

$$\phi = \frac{10^{-4}}{4 \times 2} = 0.125 \times 10^{-4}$$

$$\phi = \frac{10^{-4}}{4 \times 2} = 0.125 \times 10^{-4}$$

$$\mathbf{\Phi} = 1.25 \times 10^{-5}$$

16. Ans (2)

$$T = m\omega^2 r$$

$$450 = \frac{1}{2} \times \omega^2 \times (1)$$

$$\therefore \omega = 30 \text{ rad/sec}$$

Ans (2) 17.

$$\frac{E_0}{B_0} = C \text{ in vaccum}$$

$$E_0 = B_0 C$$

$$E_0 = B_0C$$

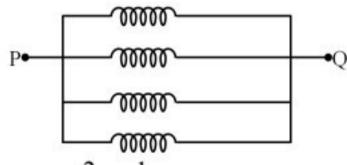
$$= 3 \times 10^{-6} \times 3 \times 10^{8}$$

$$= 900 \text{ V/m}$$

18. Ans (2)

All in parallel,

After redraw,



$$L_{PQ} = \frac{2}{4} = \frac{1}{2}H$$

19. Ans (3)

$$V^2 = V_R^2 + V_L^2$$

$$\therefore V_L^2 = V^2 - V_R^2$$

$$V_L = \sqrt{(220)^2 - (132)^2}$$

$$=\sqrt{88 \times 352} = 176V$$

20. Ans (4)

In presence of magnetic field

$$\vec{F} = q(\vec{v} \times \vec{B})$$

$$\Rightarrow \vec{F} \bot \vec{B}$$

$$\Rightarrow \vec{a} \perp \vec{B}$$

$$\therefore \vec{a} \bot \vec{B} = 0$$

$$3-12\alpha=0$$

$$\alpha = 3/12 = 1/4$$

21. Ans (2)

$$\frac{F}{\ell} = \frac{\mu_0 i, i_2}{2\pi d}$$

$$\Rightarrow \frac{F}{\ell} = \frac{2 \times 10^{-7} \times 5 \times 5}{0.5}$$

$$= 10^{-6} \text{ N/m and repulsive}$$

Ans (2) 22.

$$r = \frac{mv}{qB}$$

 $v \rightarrow same$

 $B \rightarrow same$

$$r \propto \frac{m}{a}$$

$$\frac{r_1}{r_2} = \frac{(m/q)_1}{(m/q)_2}$$

$$\frac{\mathbf{r}_1}{\mathbf{r}_2} = \frac{4\mathbf{m}}{\mathbf{m}} \times \frac{\mathbf{q}}{2\mathbf{q}}$$

$$r_2 = r/2$$

Ans (2)

$$P_1V_1^{\ \gamma} = P_2V_2^{\ \gamma}$$

$$P_2 = P_1 \left(\frac{V_1}{V_2}\right)^{\gamma}$$

$$P_2 = 1 \times \left(\frac{16}{2}\right)^{5/3}$$

$$Y = 5/3$$

$$P_2 = 32 \text{ atm}$$

24. Ans (1)

$$\ell_{Ai} = \ell_{Bi}$$
 and $\ell_{Af} = \ell_{Bf}$

$$\therefore \Delta \ell_{\rm A} = \Delta \ell_{\rm B}$$

$$\ell \propto_A \Delta T_1 = \ell \alpha_B \Delta T_2$$

$$\alpha_{\rm A}(180^{\circ} - 30^{\circ}) = \alpha_{\rm B} (T - 30^{\circ})$$

$$4 \alpha \times 150^{\circ} = 3 \alpha (T - 30^{\circ})$$

$$T = 230$$
°C

Ans (2)

$$U = \frac{5}{2} RT \qquad \therefore PV = RT$$

$$U = \frac{5}{2} PV \qquad V = \frac{m}{\rho}$$

$$U = \frac{5}{2} \times P \frac{m}{\rho} = \frac{5}{2} \times 8 \times 10^4 \times \frac{1}{4}$$

$$= 5 \times 10^4 J$$

26. Ans (1)

$$U = n_1 f_1 RT + n_2 f_2 RT$$

$$= 2 \times \frac{5}{2} RT + 4 \times \frac{3}{2} RT$$

$$= 5 RT + 6 RT$$

$$= 11 RT$$

Ans (2)

The second pendulum is a simple pendulum whose time period is constant and 2 sec, which does not depend on mass of the bob

28. Ans (1)

$$I \propto w^2 A^2 \text{ So, } \frac{I_1}{I_2} = \frac{(4)^2}{(8)^2} \times \frac{(2\pi)^2}{(6\pi)^2} = \left(\frac{4}{8}\right)^2 \left(\frac{2\pi}{6\pi}\right)^2$$

$$\frac{I_1}{I_2} = \frac{1}{4} \times \frac{1}{9} = 1 : 36$$

29. Ans (4)

$$K = 6\pi \times 0.01$$

$$\Rightarrow \frac{2\pi}{\lambda} = 6\pi \times 0.01$$

$$\therefore \frac{\lambda}{2} = \frac{1}{0.06} \text{(m)}$$

$$\Rightarrow d_{\text{C.T}} = \frac{100}{6} \text{(m)} = 16.67\text{m}$$

30. Ans (3)

When light ray travels parallel to the base, the light suffers minimum deviation

$$\delta_{min} = 40^{\circ}$$

from graph,
 $i = e = 45^{\circ}$

31. Ans (3)

$$\frac{1}{-20} + \frac{1}{v} = -\frac{1}{10}$$

$$v = -20 \text{ cm}$$

32. Ans (1)

$$[ML^2T^{-2}] \rightarrow \text{Energy and Torque}$$

 $[ML^2T^{-3}] \rightarrow \text{Power}$
 $[M^0L^0T^{-1}] \rightarrow \text{Frequency}$
 $[MLT^{-2}] \rightarrow \text{Force}$

33. Ans (2)

For (A): A and $\frac{A^3}{R}$ may have same dimension.

For (B): As A and B have different dimension so $\exp\left(-\frac{A}{B}\right)$ is meaningless.

For (C): AB^2 is meaningful.

For (D): AB^{-4} is meaningful.

34. Ans (3)

T = I
$$\alpha$$

5g × 0.5 - 2g × 0.5
= $(5 \times 0.5^2 + 2 \times 0.5^2)\alpha$
 $\alpha = 8.4 \text{ ra/s}^2$

35. Ans (2)

Forces will be such that door will be in rotational as well as translational equilibrium

36. Ans (2)

$$\frac{dA}{dt} = \frac{\pi R^2}{T}$$

$$T^2 = \frac{4\pi^2}{GM} R^3$$

$$T = \frac{2\pi}{\sqrt{GM}} R^{3/2} \Rightarrow \frac{dA}{dT} = \frac{\pi R^2}{\frac{2\pi}{\sqrt{GM}} R^{3/2}}$$

$$\frac{\frac{dA_1}{dt}}{\frac{dA_2}{dt}} = \sqrt{\frac{R_1}{R_2}} = n \Rightarrow \frac{R_1}{R_2} = n^2$$

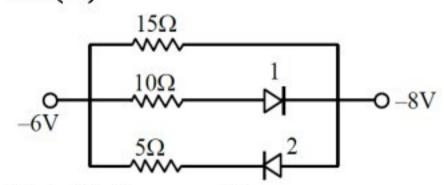
37. Ans (2)

$$W_{ext} + W_g = 4K = 0$$

$$W_{ext} - m_4 V = 0$$

$$Wext = 2 \times \frac{4}{2} = 4 J$$

38. Ans (3)

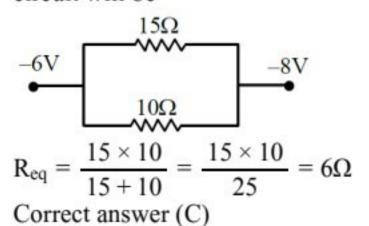


Diode 2 is in reverse bias

So current will not flow in branch of 2nd diode, So we can assume it to be broken wire.

Diode 1 is in forward bias

So it will behave like conducting wire. So new circuit will be



39. Ans (1)

For emission of photo electron $\lambda \leq \lambda_0$ $\lambda_0 \longrightarrow$ threshold wavelength

40. Ans (2)

$$F \propto \frac{1}{r^2}$$
 [Electrostatic force]
 $r \propto n^2$
 $F \propto \frac{1}{4}$

41. Ans (1)

Only Lyman series is absorbed as higher energy levels are unstable.

42. Ans (4)

$$NMSD = (N+1)VSD \Rightarrow 1VSD = \left(\frac{N}{N+1}\right)MSD$$

[Given = 1MSD = a units]

$$LC = 1MSD - 1VSD = \left(1 - \frac{N}{(N+1)}\right) a = \left(\frac{1}{N+1}\right) a \text{ unit}$$

43. Ans (4)

MSR = 0 mm, CSR = 52 div,

$$LC = \frac{1}{100} = 0.01 \text{ mm}$$

Diameter = $(0 + 52 \times 0.01)$ mm = 0.052 cm

44. Ans (4)

$$v_T \propto r^2 \Rightarrow \frac{r_1^2}{r_2^2} = \frac{v_{T_1}}{v_{T_2}} = \frac{9}{4} \Rightarrow \frac{r_1}{r_2} = \frac{3}{2}$$

$$\therefore \frac{V_1}{V_2} = \left(\frac{r_1}{r_2}\right)^3 = \frac{27}{8}$$

46. Ans (2)

for isoelectronic species

Cation < Neutral < anion

47. Ans (4)

Concept

48. Ans (2)

NCERT, Pg # 90

Electron gain enthalpy order is Cl > F > Br

49. Ans (2)

CO₂ has linear shape.

50. Ans (1)

[NCERT-XI, Part-1, Chapter - Chemical Bonding

$$Pg.no. = 128 - 29$$

As pre M.O.T. (iso e species)

51. Ans(4)

(1)
$$NH_4^+Cl^-$$
 (2) $K^+MnO_4^-$

(3)
$$Na^{+}(O-H)^{-}$$
 (4) Cl Al Cl

52. Ans (4)

All sp³ hybridised species show $p\pi$ -d π type of bonding.

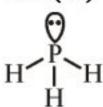
53. Ans (2)

BCl₃, PCl₅, CO₃²⁻, SO₃

Ans (1) 54.

H₂S, BF₄, PCl₅ can exist

Ans (4) 55.



P-H bond is non-polar i.e. is PH3 dipole is only due to L.P.

56. Ans (1)

 $[Co(NH_3)_5(NO_2)]Cl_2$ (A)

Linkage

NO₂ can be converted into ONO

 $[Co(NH_3)_5SO_4]Br$

Ionisation

[Co(NH₃)₆] [Cr(CN)₆]

Coordination

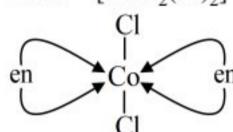
$$[Co(H2O)6]Cl3$$

Solvate

57. Ans (4)

(C)

Trans
$$- \left[\text{CoCl}_2(\text{en})_2 \right]^+$$

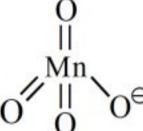


POS present optically inactive

58. Ans (1)

 $KMnO_4$

 $K^{+}MnO_{4}^{-}$



configuration diamagnetic

Ans (1) 59.

KMnO₄ is strong O.A. so HCl can't be taken in titration.

Ans (4) 60.

Zn has fulfilled configuration

Ans (4) 61.

$$\begin{array}{c}
+4 & -1 \\
PbI_4 & \xrightarrow{\text{Redox}} & PbI_2 + I_2 \\
\text{(O.A.)(R.A.)}
\end{array}$$

64. Ans (2)

66. Ans (3)

Sucrose is a disaccharide of $\alpha - D$ – Glucose and $\beta - D$ – Fructose.

68. Ans (4)

$$CH_3COOH + PCl_5 \rightarrow CH_3 - C - Cl \xrightarrow{CH_3MgBr} \frac{CH_3COOH + PCl_5}{O} \rightarrow CH_3 - Cl \xrightarrow{CH_3MgBr} \frac{CH_3MgBr}{O}$$

$$CH_{3} \xrightarrow{C} C-CH_{3} \xrightarrow{(1) CH_{3}MgBr} CH_{3} \xrightarrow{C} C-CH_{3}$$

$$OH$$

$$OH$$

$$Product$$

69. Ans (4)

Reagent :
$$\begin{matrix} O \\ \parallel \\ NH_2 - NH - C - NH_2 \end{matrix}$$

Semicarbazide

72. Ans (4)

NCERT 11th P.No. 374

73. Ans (1)

Rate of S_N^2 reaction $\alpha = \frac{1}{\text{steric hindrance}}$

74. Ans (3)

Fact.

75. Ans (1)

Because they have same molecular formula but different F-G.

83. Ans (2)

More reactive metal displaces less reactive metal from their salt solution.

$$RLVP = \frac{in_B}{n_A + in_B}$$

$$0.4 = \frac{i}{3 + i}$$

$$i = 2$$

$$\Rightarrow \alpha = 100\%$$

91. Ans (3)

NCERT, Pg. # 22

NCERT XII Pg. # 15, 16

NCERT, Pg. #7

94. Ans (4)

NCERT-XII, Pg. # (E)-63

95. Ans (2)

NCERT Pg. # 62

96. Ans (1)

NCERT Pg. No. # 64

97. Ans (1)

NCERT Pg. #72

98. Ans (3)

NCERT Pg. #73

99. Ans (2)

NCERT Pg. #83

100. Ans (1)

NCERT Pg. #92

101. Ans (3)

NCERT Pg. # 90

102. Ans (2)

NCERT XII Pg. # 95

103. Ans (3)

NCERT XII, Pg. # 100, 101

104. Ans (2)

NCERT Pg. # 106

105. Ans (4)

NCERT Pg. # 104

106. Ans (4)

NCERT Pg. # 193

107. Ans (3)

NCERT, Pg. # 202

108. Ans (2)

NCERT Pg. # 198

109. Ans (2)

NCERT Pg. # 223

110. Ans (2)

NCERT Pg.# 213

111. Ans (1)

Module-1

112. Ans (1)

NCERT-XI, Pg. # 19, 129

113. Ans (3)

NCERT (XI) Pg # 09

114. Ans (4)

NCERT XI Pg.# 9

115. Ans (2)

NCERT Pg. No. # 19,21,26,39

116. Ans (3)

NCERT Pg. No. # 223

117. Ans (1)

Module Pg. #234

118. Ans (3)

NCERT XI, Page No. - 227,230 + Module

119. Ans (3)

NCERT XI Page No. 233

120. Ans (1)

NCERT XI Pg. # 223

121. Ans (2)

NCERT XI Page No. 218, 220

122. Ans (3)

NCERT Pg. No. # 243

123. Ans (1)

NCERT Pg. No. # 239

124. Ans (4)

XI NCERT Page. No :- 207, 13.2

125. Ans (1)

NCERT XI Pg. # 228, 231, 233

126. Ans (2)

NCERT (XI) Pg # 80, 81

127. Ans (4)

NCERT (XI) Pg # 78, 79, 80, 81

128. Ans (3)

NCERT-XI, Pg. # 76

129. Ans (1)

Both A & R are correct and R is correct explaination of assertion.

130. Ans (2)

NCERT Page No. 87, 90

131. Ans (1)

NCERT Page No. 86

132. Ans (2)

XIth NCERT Page No. - 87, 90

133. Ans (2)

NCERT, Pg. # 193

134. Ans (3)

NCERT, Pg # 225

135. Ans (2)

NCERT Pg#61,69,73,(E);68,76,77,82(H)

138. Ans (2)

NCERT, Pg. # 44, 45

139. Ans (4)

NCERT, Pg. # 42

140. Ans (4)

NCERT XII Pg # 124

141. Ans (3)

NCERT Pg. # 200

142. Ans (2)

NCERT Pg # 194

143. Ans (4)

NCERT Pg#199

ALLEN®

144. Ans (4) NCERT-XI Page No. 234

145. Ans (3) NCERT, Pg. # 234

146. Ans (4) NCERT Pg # 48

147. Ans (2) NCERT Pg. # 188 (Fig. 14.3)

148. Ans (1) NCERT Pg. # 183

149. Ans (1) NCERT Pg. # 185, 186, 187

150. Ans (1) NCERT Page No. # 138

152. Ans (2) NCERT Pg. # 18

153. Ans (2) NCERT, Pg. # 332

154. Ans (4) NCERT Pg # 242

155. Ans (1) NCERT Pg. # 211,212,213

156. Ans (3) NCERT, Pg. # 208

157. Ans (2) NCERT, Pg. # 35

158. Ans (2) NCERT Pg. # (E)-36, (H)-39

159. Ans (3) Module-4 Pg#100

160. Ans (4) NCERT Pg. No. # 222-223

161. Ans (3) NCERT Pg. # 30

163. Ans (4) NCERT XI, Pg.# 107 164. Ans (2) NCERT (XII) Pg. # 195

165. Ans (1) NCERT-XII Pg. # 202

166. Ans (1) NCERT Pg # 212

168. Ans (4) NCERT XI Pg # 134

169. Ans (3) NCERT-XI, Pg. # 94

170. Ans (4) NCERT-XI, Pg # 125

171. Ans (3) NCERT Pg#236

172. Ans (2) NCERT Pg. No. # 186, 187

173. Ans (1) NCERT-XI Pg. # 278, 279

174. Ans (1) NCERT Pg. # 241

175. Ans (4) NCERT Pg. No. # 223

176. Ans (3) Module-120

177. Ans (3) Module-5 Page No. # 103

178. Ans (1) NCERT Pg. # 83

180. Ans (1) Module-8 Page No. #61