SAMPLE PAPER

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**	**3**	**2**	**2**	**1**	**3**	**2**	**4**	**2**	**3**	**2**	**2**	**2**	**4**	**4**	**1**	**1**	**4**	**3**	**2**	**4**	**4**	**1**	**3**	**2**	**1**	**3**	**3**	**3**	**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.	**1**	**2**	**2**	**2**	**3**	**2**	**2**	**2**	**2**	**1**	**1**	**4**	**3**	**3**	**2**	**3**	**1**	**1**	**4**	**1**	**2**	**3**	**4**	**4**	**2**	**2**	**4**	**2**	**1**	**3**
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**	**1**	**4**	**4**	**1**	**1**	**4**	**1**	**2**	**1**	**3**	**2**	**4**	**2**	**3**	**3**	**4**	**3**	**3**	**4**	**2**	**3**	**1**	**3**	**4**	**4**	**2**
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.	**4**	**4**	**3**	**4**	**1**	**1**	**3**	**4**	**4**	**3**	**2**	**3**	**1**	**2**	**1**	**2**	**1**	**1**	**1**	**4**	**1**	**2**	**2**	**1**	**1**	**4**	**2**	**1**	**1**	**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.	**1**	**2**	**4**	**1**	**4**	**2**	**4**	**3**	**4**	**3**	**4**	**1**	**1**	**3**	**2**	**4**	**1**	**1**	**2**	**3**	**2**	**4**	**2**	**1**	**1**	**4**	**1**	**1**	**1**	**2**
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.	**2**	**4**	**4**	**4**	**2**	**1**	**2**	**4**	**4**	**2**	**3**	**4**	**3**	**2**	**2**	**1**	**1**	**3**	**1**	**1**	**3**	**3**	**4**	**2**	**1**	**3**	**1**	**4**	**1**	**1**
Q.	181	182	183	184	185	186	187	188	189	190	191	192	193	194	195	196	197	198	199	200										
A.	**2**	**4**	**2**	**2**	**3**	**2**	**4**	**4**	**2**	**4**	**4**	**2**	**1**	**2**	**4**	**2**	**2**	**4**	**3**	**3**										

8. **Ans (4)**

$$\frac{E}{B} = v = \frac{\omega}{k} = \frac{3 \times 10^{11}}{5000} = 6 \times 10^7$$

$E = B \times 6 \times 10^7 = 2400$

9. **Ans (2)**

For conducting sphere

$$E = \frac{\sigma}{\varepsilon_0}$$

$$V = \frac{\sigma R}{\varepsilon_0}$$

As both sphere have same potential after connecting the wire

$V_1 = V_2$

$\sigma_1 R_1 = \sigma_2 R_2$

10. **Ans (3)**

$W = PE(\cos\theta_1 - \cos\theta_2)$

$= PE(\cos 0^\circ - \cos 30^\circ) = PE\left(1 - \frac{\sqrt{3}}{2}\right)$

11. **Ans (2)**

$V_E \propto \sqrt{gR}$

12. **Ans (2)**

$$\frac{R_2}{R_1} = \left(\frac{u_2}{u_1}\right)^2 - \frac{\sin 2\theta_2}{\sin 2\theta_1}$$

$$\frac{R_2}{R} = \left(\frac{2u}{u}\right)^2 \frac{\sin 60^o}{\sin 30^o} = 4\sqrt{3}$$

$R_2 = 4\sqrt{3}R$

13. **Ans (2)**

$$T = \frac{100}{25} = 4s \Rightarrow \frac{2u\sin\theta}{g} = 4 \Rightarrow u\sin\theta = 20 ms^{-1}$$

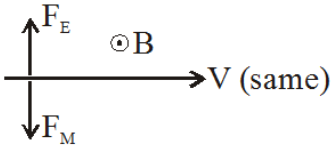
14. **Ans (4)**

Impulse = Change in momentum

$= 2\left[\left(2 \times 2\hat{i} - 4\hat{j}\right) - \left(2 \times 0\hat{i} - 4\hat{j}\right)\right]$

$= \left(8\hat{i}\right)$ kg-m/s

15. **Ans (4)**



$E \longrightarrow$ y direction

$B \longrightarrow$ z direction

16. **Ans (1)**

$$M = IA = I(\pi r^2) = \left(\frac{ev}{2\pi r}\right)\pi r^2 = \frac{evr}{2}$$

17. **Ans (1)**

$$n_1\left(\frac{hc}{\lambda_1}\right) = n_2\left(\frac{hc}{\lambda_2}\right) = \text{power} = 130 \text{ W}$$

n_1, n_2 number of photons emitted per second by UV & IR sources

$$\frac{n_1}{n_2} = \frac{\lambda_1}{\lambda_2} = \frac{400\,nm}{700\,nm} = \frac{4}{7} = 0.57$$

18. **Ans (4)**

$$\frac{BE}{\text{nucleon}} = \frac{0.042 \times 931}{10} = 3.9 MeV$$

19. **Ans (3)**

Change in mass number by 2α only

$= -4 - 4 = -8$

so new mass number $= 180 - 8 = 172$

change in atomic number by 2α and β only

$= -2 - 2 + 1 = -3$

So new atomic number $= 72 - 3 = 69$

20. **Ans (2)**

$$KE = \frac{3}{4}E$$

$$\Rightarrow v = \frac{\sqrt{3}}{2}\omega A$$

$$\therefore \frac{\sqrt{3}}{2}\omega A = \omega\sqrt{A^2 - x^2}$$

$$\Rightarrow x = \frac{A}{2} \quad \therefore t = \frac{T}{12} = \frac{2}{12} = \frac{1}{6}\text{sec}$$

21. **Ans (4)**

$\delta = i + e - A$

$55^\circ = 45^\circ + e - 60^\circ$

$e = 55^\circ - 45^\circ + 60^\circ$

$e = 70^\circ$

22. **Ans (4)**

$$\frac{1}{F} = \frac{1}{f_1} + \frac{1}{f_2} \Rightarrow \frac{1}{80} = \frac{1}{20} + \frac{1}{f_2} \Rightarrow f_2 = \left(\frac{-80}{3}\text{cm}\right)$$

Power of second lens

$$P_2 = \frac{100}{f_2} = \frac{100}{-80/3} = -3.75 \text{ D}$$

23. **Ans (1)**

$$(M.I.)_{sys.} = \frac{ML^2}{3}\sin^2 45^\circ \times 4$$

$$= \frac{ML^2}{3} \times \frac{1}{2} \times 4 = \frac{2}{3}ML^2$$

24. Ans (3)

$n_e n_h = n_i^2$

$$n_h = \frac{n_i^2}{n_e} = \frac{(6\times10^{15}\text{m}^{-3})^2}{1.2\times10^{9}\text{m}^{-3}}$$

$N_A \approx n_h = 3\times10^{22}\text{m}^{-3}$

25. Ans (2)

In forward bias potential barrier decreases (v_0-v) & in reverse bias potential barrier increases (v_0+v).

26. Ans (1)

The rate of heat loss is proportional to the difference in temperature. The difference of temperature between the tea in cup A and the surrounding is reduced, so it loses less heat. The tea in cup B loses more heat because of large temperature difference. Hence the tea in cup A will be hotter.

27. Ans (3)

$$\text{Pitch (p)} = \frac{1\text{ mm}}{2} = 0.5\text{ mm}$$

$$\text{Least count (LC)} = \frac{\text{pitch}}{\text{No. of CSD}} = \frac{0.5\text{ mm}}{100} = 0.005\text{ mm}$$

In fig (1) – No measurement:

There is a Negative zero error

ZE = – 4, CSD = –4 × 0.005 mm = –0.02 mm

In fig (2) – During measurement :

MSR = 4 pitch = 4 × 0.5 mm = 2 mm

CSR = 55 CSD = 55 × 0.005 mm

= 0.275 mm

Final Reading = 2 mm + 0.275 mm – (–0.02 mm)

= 2.295 mm

28. Ans (3)

Applying conservation of mechanical energy between A & B

$(KE + U)_A = (KE + U)_B$

$$\frac{1}{2}mv^2 + 0 = 0 + mgh$$

$v = \sqrt{2gh} = \sqrt{2\times10\times320} = 80$ m/s

29. Ans (3)

$P = \vec{F}.\vec{V} = (10\hat{i} + 10\hat{j} + 20\hat{k}).(5\hat{i} - 3\hat{j} + 6\hat{k})$

= 140 J/S

30. Ans (3)

Let $v = kg^x \lambda^y \rho^z$

Now by substituting the dimensions of each quantities and equating the powers of M, L and T we get z = 0, x = 1/2, y = 1/2

31. Ans (1)

Time $\propto c^x G^y h^z \Rightarrow T = kc^x G^y h^z$

Putting the dimensions in the above relation

$\Rightarrow [M^0L^0T^1] = [LT^{-1}]^x[M^{-1}L^3T^{-2}]^y[ML^2T^{-1}]^z$

$\Rightarrow [M^0L^0T^1] = [M^{-y+z}L^{x+3y+2z}T^{-x-2y-z}]$

Comparing the powers of M, L and T

$-y + z = 0 \quad \ldots(i)$

$x + 3y + 2z = 0 \quad \ldots(ii)$

$-x - 2y - z = 1 \quad \ldots(iii)$

On solving equations (i) and (ii) and (iii)

$$x = \frac{-5}{2}, y = z = \frac{1}{2}$$

Hence dimension of time are $[G^{1/2}h^{1/2}c^{-5/2}]$.

32. Ans (2)

Let the frequency of first tuning fork is f

The frequencies of other tuning forks are,

$(f-3); (f-2\times3), \ldots. (f-17\times3), \ldots.. (f-25\times3).$

As per given condition,

$f = 2(f-25\times3)$

or $f = 25\times6 = 150$ Hz

The frequency of 18th tuning fork

$= f - 17\times3 = 150 - 51 = 99$ Hz.

33. Ans (2)

$y = x_{5B} - x_{3D}$

$$= \frac{5D\lambda}{d} - \frac{5D\lambda}{2d}$$

$$y = \frac{5D\lambda}{2d}$$

$$y = \frac{5\times1\times6.5\times10^{-7}}{2\times1\times10^{-3}}$$

y = 1.63 mm

34. Ans (2)

$\tan(i_p) = \mu$

$\tan(i_p) = \sqrt{3}$

$i_p = 60°$

35. Ans (3)

Heat lost = Heat gained

$m(0.8)(60-53) = m(X)(53-45)$

$X = 0.7$ cal/gm°C

SECTION - B

36. Ans (2)

$$\frac{1}{C_{net}} = \frac{1}{C_1} + \frac{1}{C_2} + \frac{1}{C_3} + \ldots\ldots + \frac{1}{C_7}$$

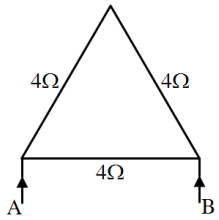
$$\frac{1}{C_{net}} = \frac{1}{C} + \frac{2}{C} + \frac{3}{C} + \frac{4}{C} + \frac{5}{C} + \frac{6}{C} + \frac{7}{C} = \frac{28}{C}$$

So $C_{net} = \frac{C}{28}$

37. Ans (2)

In case of stretching of wire

$$R \propto \ell^2 \Rightarrow \frac{R_F}{R_I} = \frac{\ell_F^2}{\ell_I^2} \Rightarrow \frac{R}{3} - \frac{-(2\ell)^2}{\ell^2} \Rightarrow R = 12\Omega$$



$$R_{AB} = \frac{8\times 4}{8+4} = \frac{8}{3}\Omega$$

38. Ans (2)

$MI_1 = \phi_2$

$M = \frac{\phi_2}{I_1}$

39. Ans (2)

Potential at a distance 2R from surface

$$V_0 = \frac{kQ}{3R} \Rightarrow \frac{kQ}{R} = 3V_0$$

Potential at a distance r < R

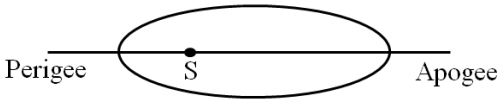
$$V = \frac{kQ(3R^2 - r^2)}{2R^3} \text{ where } r = \frac{R}{2}$$

$$V = \frac{kQ}{2R^3}\left(3R^2 - \left(\frac{R}{2}\right)^2\right)$$

$$V = \frac{11}{8}\frac{kQ}{R}$$

So $V = \frac{11}{8} \times 3V_0 = \frac{33}{8}V_0$

40. Ans (1)



Angular momentum of planet around the sun is conserve.

Planet move from apogee to perigee distance decreases and velocity increases.

Potential energy $= -\frac{GMm}{r}$

$r \downarrow$ PE $\downarrow$

41. Ans (1)

$0 = 15 - 0.3t \Rightarrow t = 50$

At t = 50 sec, Vehicle becomes restriction.

$$S = \frac{u^2}{2a} = \frac{15^2}{2\times 0.3} = 375\text{m}$$

Distance from signal = 400 − 375 = 25 m

42. Ans (4)

By Ampere's circuital law

$B\oint d\ell = \mu_0 I_{Net}$

Where $\oint d\ell = 2\pi r = 2\pi\left(\frac{5R}{4}\right)$

and $I_{Net} = ?$

$$I_{Net} = \frac{I}{3\pi R^2}\left(\pi\left(\frac{25R^2}{16} - R^2\right)\right)$$

$$\frac{I}{3\pi R^2} \times \frac{9\pi R^2}{16}$$

$$\Rightarrow I_{Net} = \frac{3I}{16}$$

$$\text{So, } B\left(2\pi\left(\frac{5R}{2}\right)\right) = \mu_0\left(\frac{3I}{16}\right)$$

$$\Rightarrow B = \frac{3\mu_0 I}{40\pi R}$$

43. Ans (3)

from the work energy theorem

work done = change in KE

$$qE_0x = \frac{1}{2}mv^2 - \frac{1}{2}mu^2$$

$$\left\{v = \sqrt{6^2+8^2} = 10\text{m/s}\right\}$$

$$qE_0x = \frac{1}{2} \times m \times 10^2 - 0 = 50\text{m}$$

$$x = \frac{50m}{qE_0}$$

44. Ans (3)

$$2\pi r = n\lambda \Rightarrow n = \frac{2\pi r}{\lambda} = \frac{2\times 3.14\times 5.3\times 10^{-11}}{1.1\times 10^{-10}}$$

$= 3$

45. Ans (2)

$$f = \frac{1}{2\pi}\sqrt{\frac{k_{eq}}{m}} : k_{eq} = 4k$$

$$\therefore f = \frac{1}{2\pi}\sqrt{\frac{4k}{m}}$$

46. Ans (3)

Before entering water, velocity of ball = $\sqrt{2gh}$. If after entering water, this velocity does not change then it should be equal to terminal velocity.

$$\therefore \sqrt{2gh} = \frac{2}{9}\frac{r^2(\rho_b - \rho_w)g}{\eta}$$

$$h = \frac{1}{2g}\left[\frac{2}{9}\frac{r^2(\rho_b - \rho_w)g}{\eta}\right]^2$$

$$= \frac{2}{81}\frac{r^4(\rho_b - \rho_w)^2 g}{\eta^2}$$

$$= \frac{2}{81} \times \frac{(3\times 10^{-4})^4 (10^4 - 10^3)^2 \times 10}{(10^{-5})^2}$$

$$= 1.6 \times 10^3 \text{ m}$$

47. Ans (1)

Angular magnification $|m| = \frac{f_0}{f_e} = 5 \Rightarrow f_0 = 5f_e$

distance between objective and eye-piece = $f_0 + f_e$

$f_0 + f_e = 36$

$5f_e + f_e = 36 \Rightarrow f_e = 6$ cm

and $f_0 = 30$ cm

48. Ans (1)

$T_1 + T_2 = 2Mg$ .....(1)

torque about 'c'

$$T_1.\frac{L}{2} + Mg.\frac{L}{4} = T_2.\frac{L}{2}$$

$2T_1 + Mg = 2T_2$ .....(2) on solving (1) and (2)

$$T_2 = \frac{5Mg}{4} \text{ and } T_1 = \frac{3Mg}{4}$$

49. Ans (4)

As wein's law $\lambda_{max} \propto \frac{1}{T}$ so on heating we move left in VIBGYOR also a hotter star will emit colour of lower wavelength.

Planck's radiation law with energy spectrum graph of black body.

Kirchoff's law says deserts absorb more at daytime so emit more at neight.

50. Ans (1)

$v = 2n(\ell_2 - \ell_1)$

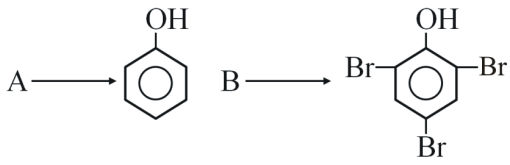
$= 2 \times 500\ (49.2 - 16) \times 10^{-2}$

$= 332$ m/s

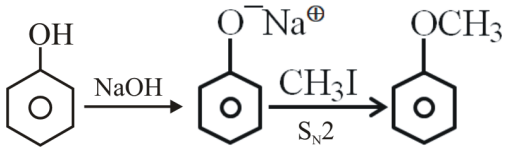
SUBJECT : CHEMISTRY

SECTION-A

51. Ans (2)



52. Ans (3)



53. Ans (4)

It is carbyl amine reaction (Hoffman isocyanide test)

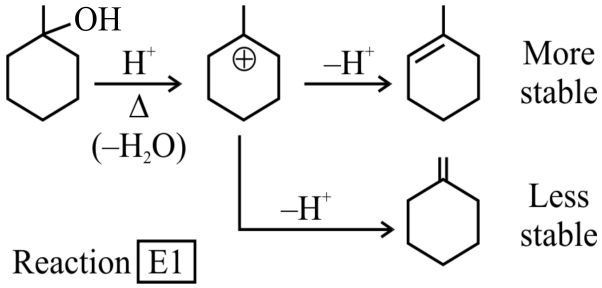
54. Ans (4)

NCERT-XII, Pg. # 405

55. Ans (2)

NCERT XII Pg.No.353

56. Ans (2)



Reaction E1

57. Ans (4)

P = CH_3CH_2CN Q = CH_3CH_2NC

functional group isomers

59. Ans (1)

NCERT XII, Pg. # 347, Part - 2

60. Ans (3)

Page No. 49, Principal related to practical chemistry (Allen booklet)

61. Ans (2)

NCERT-XII, Pg. # 401

62. **Ans (4)**

NCERT-XII, Pg. # 393, 394

63. **Ans (1)**

$$M = \frac{n_{solute} \times 1000}{V_{solution}\,(mL)}$$

$$= \frac{0.2 \times 1000\ d}{0.2 \times 254 + 0.8 \times 78}$$

$$= \frac{200\ d}{113.2} = 1.7667\ d$$

69. **Ans (1)**

$$2AB_3(g) \rightleftharpoons A_2(g) + 3B_2(g)$$

t = 0	2	0	0
t = t	2 – 2x = 1	x	3x
	x = 0.5 M		3x = 1.5 M

$$K_C = \frac{0.5 \times (1.5)^3}{(1)^2} = 1.6875\ (M)^2$$

71. **Ans (1)**

$$Kt = 2.303 \log \frac{[A]_0}{[A]_t}$$

$$6 \times t = 2.303 \log \frac{0.5}{0.05}$$

$$t = \frac{2.303}{6} = 0.384\ min$$

72. **Ans (2)**

$$\frac{P_A^o - P_S}{P_S} = \frac{\eta_B}{\eta_A}$$

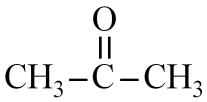
$$\frac{100 - 75}{75} = \frac{w_B \times 18}{60 \times 100}$$

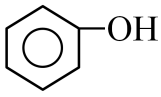
$$\frac{1}{3} = \frac{w_B \times 3}{10 \times 100}$$

$$w_B = \frac{1000}{9} = 111.1g$$

SECTION-B

86. **Ans (1)**

Y is 

X is 

87. **Ans (3)**

NCERT-XII Pg#367

88. **Ans (4)**

NCERT-12th, Page No. 406

89. **Ans (4)**

NCERT XII Pg.No.363

90. **Ans (2)**

NCERT XII Pg.No.409

91. **Ans (4)**

Reaction based

SUBJECT : BOTANY

All hints are according to old NCERT (2022-23)

SECTION - A

101. **Ans (2)**

NCERT-XI Pg. No. 9,11 (Table 1.1)

102. **Ans (3)**

NCERT-XI Pg. No. 6

103. **Ans (1)**

NCERT XIth, Page : 24, Para-2.3.4

104. **Ans (2)**

NCERT XI pg.# 32

105. **Ans (1)**

NCERT-XI, Pg. # 76

106. **Ans (2)**

NCERT XI Pg.# 73

107. **Ans (1)**

NCERT XI, Pg # 79,80,81

108. **Ans (1)**

NCERT XII Pg. # 4

109. **Ans (1)**

NCERT-XI Page : 88

110. **Ans (4)**

NCERT XI Pg. 92

111. **Ans (1)**

NCERT-XI Pg. # 86

112. **Ans (2)**

NCERT XI Pg. 91, 92

113. **Ans (2)**

NCERT XI Pg # 210, Fig. 13.3 a

114. Ans (1)
NCERT-XI Pg. # 213, 13.6.3
Water split to released proton and electrons move to reaction centre of PS-II and proton accumulated to lumen of thylakoid, The site of splitting of water is inner side of thylakoid membrane so proton accumulated in lumen.

115. Ans (1)
NCERT XI Pg: 236

116. Ans (4)
NCERT-XI Pg. # 232

117. Ans (2)
NCERT-XI, Pg # 248

118. Ans (1)
NCERT-XI Pg. # 241

119. Ans (1)
NCERT XII Pg. # 25

120. Ans (1)
NCERT XII, Pg. # 21

121. Ans (1)
NCERT-XII, Pg. # 23

122. Ans (2)
NCERT-XII, Pg. # 76 & 77

123. Ans (4)
NCERT-XII, Pg. # 76

124. Ans (1)
NCERT-XII Pg. # 32

125. Ans (4)
NCERT-XII, Pg. # 107, Fig. 6.8

126. Ans (2)
NCERT-XII Pg#187

127. Ans (4)
NCERT-XII, Pg. No. # 230

128. Ans (3)
NCERT-XII, Pg. No. # 227

129. Ans (4)
NCERT XII Pg#242-243

130. Ans (3)
NCERT XII Pg. No :- 263

131. Ans (4)
NCERT-XII, Pg. # 267

132. Ans (1)
NCERT-XII Pg. # 233

133. Ans (1)
NCERT-XII Pg. # 227

134. Ans (3)
NCERT-XII Pg. # 243

135. Ans (2)
NCERT-XII Pg. # 258

SECTION - B

136. Ans (4)
NCERT-XI Pg. # 21

137. Ans (1)
NCERT-XI, Pg. # 32, 33, 40
Chara, Spirogyra, Volvox

138. Ans (1)
NCERT-XIth, Pg.#.#81

139. Ans (2)
NCERT XI, Pg # 68,80,81

140. Ans (3)
NCERT-XI Pg. # 86

141. Ans (2)
NCERT-XI Pg. # 89

142. Ans (4)
NCERT XI Page # 223

143. Ans (2)
NCERT-XI Pg. # 233

144. Ans (1)
NCERT-XI, # 230–231

145. Ans (1)
NCERT-XI Pg. # 249

146. Ans (4)
NCERT-XII, Pg. # 28, 31, 36

147. **Ans (1)**
NCERT-XII Pg. # 80
Mendel considered seed shape and seed colour in dihybrid cross which were present on non homologous chromosomes that showed independent assortment leading to new phenotype.

148. **Ans (1)**
NCERT XII Pg#108-109

149. **Ans (1)**
NCERT XII Pg#111

150. **Ans (2)**
NCERT-XII, Pg.# 235

SUBJECT : ZOOLOGY

SECTION - A

151. **Ans (2)**
NCERT XI # 52

152. **Ans (4)**
NCERT XI (E) Pg. # 57

153. **Ans (4)**
Pg. No. 57 NCERT 2022 - 2023 Edition

155. **Ans (2)**
NCERT E & H Pg.#101

159. **Ans (4)**
NCERT XI Pg # 321

166. **Ans (1)**
NCERT Pg # 46

167. **Ans (1)**
NCERT XII, Page # 61

169. **Ans (1)**
NCERT-XII Pg. # 152, 154

170. **Ans (1)**
NCERT Pg. # 146

171. **Ans (3)**
NCERT XII, Pg.# 129, para 7.3

172. **Ans (3)**
NCERT XI Pg. # 141 Para 7.9

173. **Ans (4)**
NCERT XI, Pg. No. 8.5.4 & 8.5.5

176. **Ans (3)**
NCERT-XI, Pg # 135, 137, 140

179. **Ans (1)**
NCERT XI Pg.# 145

180. **Ans (1)**
NCERT XI, Pg. # 149

181. **Ans (2)**
NCERT PAGE NO. – 148

182. **Ans (4)**
NCERT XII Pg.# 212

183. **Ans (2)**
NCERT XII Pg # 209

184. **Ans (2)**
NCERT pg.no.194

185. **Ans (3)**
NCERT Pg. No. 171

SECTION - B

186. **Ans (2)**
NCERT (XII) Pg. # 199

190. **Ans (4)**
NCERT-XI , Pg# 285

191. **Ans (4)**
NCERT - XI, Page No. 271, Para - 17.2

193. **Ans (1)**
NCERT (XIIth) (E)Pg. # 47, Fig-3.5
NCERT (XIIth) (H)Pg. # 51, Fig-3.5

195. **Ans (4)**
NCERT (XII) Pg. # 150,151, Para -8.2.1

196. **Ans (2)**
NCERT XII, Pg.#209

198. **Ans (4)**
NCERT XII Pg. # 198

199. **Ans (3)**
NCERT (XII) Pg. # 121-123

200. **Ans (3)**
NCERT pg.no.198