CLASSROOM CONTACT PROGRAMME
(Academic Session : 2024 - 2025)

ENTHUSE COURSE
PHASE : MEA,B,C,D,L,M,N,O,P,Q & MEPS
TARGET : PRE-MEDICAL 2025

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

TEST DATE : 01-12-2024

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

HINT – SHEET

SUBJECT : PHYSICS

SECTION - A

1. Ans (3)

$$PV = \frac{mRT}{M_w}$$

$$P \propto mT$$

$$\frac{P}{20} = \frac{m}{2m} \times \frac{350}{300}$$

$$P = 11.67 \text{ atm}$$

2. Ans (1)

$$\text{Avg KE} = \frac{3}{2}KT$$

$\because$ T = const.

So Avg KE = const.

3. Ans (1)

In $1 \longrightarrow 2$ process is isobaric

$$\frac{V_1}{T_1} = \frac{V_2}{T_2} \Rightarrow T_2 = \frac{V_2}{V_1}.T_1 = 2(27 + 273)$$

$$= 600 \text{ K}$$

4. Ans (1)

Change in volume is very small and the pressure is decreased considerably.

This is characteristics of liquid.

5. Ans (4)

Heat required by ice to melt at

$0^oC = 100 \times 80 = 8000$ cal.

Heat released by water to fall to 0^oC

$300 \times 1 \times 25 = 7500$ cal

6. **Ans (2)**

$$\frac{-d\theta}{dt} = \frac{e\sigma A\left(\theta^4 - \theta_0^4\right)}{mS}$$

7. **Ans (4)**

$$PV = \frac{m}{M_W}.RT$$

$$P = \frac{PRT}{M_W}$$

8. **Ans (3)**

Strain = 0

9. **Ans (3)**

$$\frac{\theta_1 - \theta_2}{t} = K\left[\frac{\theta_1 + \theta_2}{2} - \theta_0\right]$$

In the first 10 minute

$$\frac{62 - 50}{10} = K\left[\frac{62 + 50}{2} - \theta_0\right]$$

$\Rightarrow 1.2 = K[56 - \theta_0]$ .... (i)

In next 10 minute

$$\frac{50 - 42}{10} = K\left[\frac{50 + 42}{2} - \theta_0\right]$$

$\Rightarrow 0.8 = K[46 - \theta_0]$ ....(ii)

from equations (i) and (ii)

$$\frac{1.2}{0.8} = \frac{(56 - \theta_0)}{(46 - \theta_0)} \Rightarrow \theta_0 = 26\ ^\circ C$$

10. **Ans (4)**

$P \propto T^4 - T_0^4$

$$\frac{60}{P_2} = \frac{(1000)^4 - (500)^4}{(1500)^4 - (500)^4}$$

$P_2 = 320$ Watt.

11. **Ans (4)**

$$\lambda \propto \frac{1}{T}$$

$$\frac{\lambda}{\lambda_m} = \frac{2000}{3000} = \frac{2}{3}$$

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

12. **Ans (2)**

$$\frac{P}{\rho} \propto T$$

$$\frac{P_1/\rho_1}{P_2/\rho_2} = \frac{T_1}{T_2}$$

$$\frac{x}{P_2/\rho_2} = \frac{293}{393}$$

$$P_2/\rho_2 = \frac{393x}{293}$$

13. **Ans (3)**

Closed container $\Rightarrow$ V = constant

$$\frac{\Delta P}{P} = \frac{\Delta T}{T} \quad \Rightarrow \quad T = \frac{P}{\Delta P} \times \Delta T$$

$$T = \frac{100}{0.4} \times 1\ K = 250\ K$$

14. **Ans (3)**

The given diagram shows that the curves more away from the origin is at higher temperature.

15. **Ans (3)**

Total no. of moles remains same

$$\frac{P_0V}{R(300)} + \frac{P_0V}{R(300)} = \frac{PV}{300R} + \frac{PV}{600R}$$

$$\frac{2P_0}{300} = P\left[\frac{2+1}{600}\right]$$

$$P = \frac{4}{3}P_0 = \frac{4}{3}atm$$

16. **Ans (4)**

$$PV = \frac{M}{M_W}RT$$

V, M_W,R are constant

$$\frac{P_1}{M_1T_1} = \frac{P_2}{M_2T_2}$$

$$\frac{M_1}{M_2} = \frac{P_1T_2}{P_2T_1} = \frac{P \times 300}{(P/2) \times 330}$$

$$\frac{M_1}{M_2} = \frac{600}{330} = \frac{20}{11}$$

$$M_2 = \frac{11}{20}M_1 = \frac{11}{20} \times 28 = \frac{77}{5}$$

Leaked amount = $M_1 - M_2 = 28 - \frac{77}{5}$

$$= \frac{140 - 77}{5} = \frac{63}{5}\ g$$

17. **Ans (1)**

$$A = A_0e^{-\frac{bt}{2m}}$$

$$\text{or } t = \frac{2m}{b}\log_e\left(\frac{A_0}{A}\right)$$

$m = 200$ g ; $b = 40\ gs^{-1}$, $A = \frac{A_0}{2}$

$\therefore t = 6.9$ sec

or $t \approx 7$ sec

18. **Ans (4)**

Theory based

19. Ans (3)

$U = 4(1-\cos 2x)$

As $F = -\frac{dU}{dx} = -4[0 + 2\sin 2x]$

$F = -8\sin 2x$

for small oscillations

$F = -8(2x) = -16x$ ____(1)

Comparing with $F = -Kx$

$K = 16$

$\therefore T = 2\pi\sqrt{\frac{1}{16}} = \frac{\pi}{2}$

20. Ans (2)

Let n ⟶ no. of vibrations of shorter pendulum

$(n-1)\sqrt{L_{long}} = n\sqrt{l_{short}}$

$\frac{n-1}{n} = \sqrt{\frac{100}{121}} = \frac{10}{11}$

$1 - \frac{1}{n} = \frac{10}{11}$

$\frac{1}{n} = 1 - \frac{10}{11} = \frac{1}{11}$

$n = 11$

21. Ans (2)

$T = 2\pi\sqrt{\frac{\ell}{g}}$

$T^2 = \frac{4\pi^2}{g}\ell$

$\Rightarrow y^2 = \frac{4\pi^2}{g}x$

parabola opening in +x direction.

22. Ans (3)

$T' = 2\pi\sqrt{\frac{\ell}{\left(g + \frac{g}{4}\right)}} = \frac{2}{\sqrt{5}}T$

23. Ans (4)

$n = \frac{1}{2\ell}\sqrt{\frac{T}{\pi r^2 P}}, \; m = \frac{M}{\ell}$

$n \propto \frac{1}{\ell r} \Rightarrow \frac{n_1}{n_2} = \frac{r_2}{r_1} \times \frac{\ell_2}{\ell_1} = \frac{r}{2r} \times \frac{2L}{L} = 1$

24. Ans (3)

Lengths will be odd multiples of fundamental.

25. Ans (1)

$n = \frac{1}{2\ell}\sqrt{\frac{T}{m}} \Rightarrow \ell = \frac{1}{2n}\sqrt{\frac{T}{m}} = \frac{k}{n}$

$n_1 : n_2 : n_3 = 4 : 3 : 1$

$n_1 = 4x \quad n_2 = 3x \quad n_3 = x$

$\ell_1 : \ell_2 : \ell_3 = \frac{k}{4x} : \frac{k}{3x} : \frac{k}{x}$

$= 3 : 4 : 12$

26. Ans (2)

$e = \frac{L_2 - 3L_1}{2} = \frac{100 - 3 \times 32}{2}$

$= 2$ cm

27. Ans (3)

$n = \frac{1}{2l}\sqrt{\frac{T}{\pi r^2}} \propto \sqrt{\frac{T}{r^2\rho}}$

$\Rightarrow \frac{n_1}{n_2} = \sqrt{\left(\frac{T_1}{T_2}\right)\left(\frac{r_2}{r_1}\right)^2\left(\frac{\rho_2}{\rho_1}\right)} = \sqrt{\left(\frac{1}{2}\right)\left(\frac{2}{1}\right)^2\left(\frac{1}{2}\right)} = 1$

$\therefore \; n_1 = n_2$

28. Ans (4)

$v = 2f(L_2 - L_1)$

$= 2 \times 320\,(73-20) \times 10^{-2}$

$\approx 339 \text{ ms}^{-1}$

29. Ans (1)

The distance of the listener from the second speaker

$= \sqrt{(3)^2 + (4)^2} = \sqrt{25} = 5$ m

path difference = $(5 - 4.0)$ m = 1 m

For fully destructive interference $1 \text{ m} = (2m+1)\lambda/2$

Hence $\lambda = 2/(2m+1)$ m

The corresponding frequencies are given by

$n = [330 \times (2m+1)]/2 \text{ s}^{-1}$, for m = 0, 1, 2, 3, 4, ...

$= 165\,(2m+1) \text{ s}^{-1}$, for m = 0, 1, 2, 3, 4, ...

Therefore the frequencies for which the listener would hear a minimum intensity 165 Hz, 495 Hz, 825 Hz, ...

30. Ans (1)

$A = 0.05$; $\lambda = 8$ cm ; $K = \frac{2\pi}{\lambda}$

$K = \frac{2 \times 3.14 \times 100}{8} = \frac{314}{4}$

$f = \frac{v}{\lambda} = \frac{350}{8} \times 100 \Rightarrow \omega = 2\pi f = 27475$

31. Ans (1)

New amplitude = 2 (0.25) = 0.5

$$\text{New Frequency} = \frac{f}{2}$$

$$\therefore w' = \frac{w}{2} = \frac{2\pi}{2} = \pi$$

$$\text{New } K' = \frac{w'}{v} = \frac{k}{2} = \frac{2\pi}{2} = \pi$$

32. Ans (2)

Heat lost = Heat gained

$m \times 540 + m \times 1 \times (100 - 31)$

$= 180 \times 1 (31 - 25) + 20 \times 1 (31 - 25)$

$609\ m = 1200$

$$m = \frac{1200}{609} \cong 2$$

33. Ans (2)

Heat lost = Heat gained

$200 \times 1 (40 - T) = 100 \times 1 (T - 10)$

$80 - 2T = T - 10$

$90 = 3T$

$T = 30°C$

34. Ans (3)

$$v = \sqrt{\frac{\gamma P}{\rho}} = \sqrt{\frac{\gamma RT}{M_w}}$$

$$\therefore v \propto \sqrt{\frac{\gamma}{M_w}}$$

$$\frac{v_1}{v_2} = \sqrt{\frac{7/5}{5/3} \times \frac{4}{28}}$$

$$= \frac{\sqrt{3}}{5}$$

35. Ans (3)

$$\frac{v}{4}\left[\frac{1}{L_1} - \frac{1}{L_2}\right] = 3$$

$$v\left[\frac{100}{75} - \frac{100}{77}\right] = 12$$

$v = 346.5\ ms^{-1}$

SECTION - B

36. Ans (4)

ΔU is same for all path.

$Q_A = \Delta U + W_A$

$Q_B = \Delta U + W_B$

$Q_C = \Delta U + W_C$

$Q_D = \Delta U + W_D$

As $W_A > W_B > W_C > W_D$

$\therefore Q_A > Q_B > Q_C > Q_D$

39. Ans (2)

$$P = \frac{P_0}{1 + \left(\frac{V_0}{V}\right)^2} \quad \text{____(1)}$$

$V_1 = V_0$; $V_2 = 2V_0$ $\quad n = 1$

$$\text{So, } P_1 = \frac{P_0}{1 + \left(\frac{V_0}{V_0}\right)^2} = \frac{P_0}{2} \quad \text{____(2)}$$

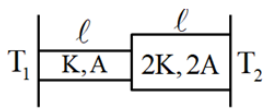
$$\text{and } P_2 = \frac{P_0}{1 + \left(\frac{V_0}{2V_0}\right)^2} = \frac{4P_0}{5} \quad \text{____(3)}$$

$\therefore P_2V_2 - P_1V_1 = nR(T_2 - T_1)$

$$T_2 - T_1 = \frac{\frac{4}{5}P_0 \times 2V_0 - \frac{P_0}{2}.V_0}{R}$$

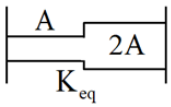
$$= \frac{11P_0V_0}{10R}$$

41. Ans (2)



$$R_{eq} = \frac{\ell}{KA} + \frac{\ell}{4KA}$$

$$= \frac{5\ell}{4KA}$$



$$R_{eq} = \frac{L}{K_{eq}A} + \frac{L}{2K_{eq}A}$$

$$= \frac{3}{2}\frac{L}{K_{eq}A}$$

$$\Rightarrow \frac{5L}{4K_A} = \frac{3L}{2K_{eq}A}$$

$$K_{eq} = \frac{6}{5}K$$

42. Ans (3)

Newton's law of cooling, holds good only for small difference of temperature.

43. Ans (3)

$Y = A \sin\omega t \cos\omega t$ cm

or $Y = \left(\frac{A}{2}\right) \sin(2\omega t)$cm

comparing with given equation.

A = 4cm so, Amplitude = 2 cm

and $\omega' = 2\omega$

$\frac{2\pi}{T'} = 2\omega$

$T' = \frac{\pi}{\omega}$

44. Ans (1)

$\frac{1}{2}KA^2 = \frac{1}{2}mv^2$

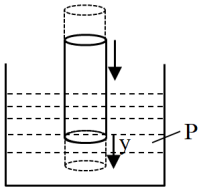
$\frac{1}{2}m\omega^2A^2 = \frac{1}{2}mv^2$

$v = A\omega$

$A = \frac{v}{\omega}$

$= \frac{0.6}{10} = 6$cm

45. Ans (1)



$F_{extra} = -(YA)$ Pg (upwards)

$F_{ext.} = -(APg)Y$ _____(1)

Comapring with

$F = -Ky$

$K = APg$

$\therefore T = 2\pi\sqrt{\frac{m}{APg}}$

46. Ans (2)

$f = \frac{n}{2L}\sqrt{\frac{T}{\mu}}$

$f = \frac{n}{2 \times 8}\sqrt{\frac{240}{3 \times 10^{-3}} \times 8} = \frac{n \times 8 \times 10^2}{2 \times 8}$

$= 50\ n$

n = 3 to 240 $\Rightarrow$ 238 frequencies

47. Ans (3)

Here $\lambda = 2(l_2 - l_1)$

where $l_1 = 9.75$ cm, $l_2 = 31.25$ cm

so $v = 2n(l_2 - l_1) = 2 \times 800\ (31.25 - 9.75)$

$= 344$ m/s

48. Ans (1)

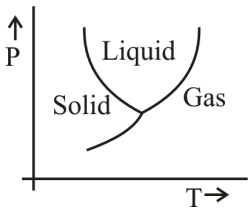
$f = \frac{\omega}{2\pi} = \frac{A}{2\pi}$

$\lambda = \frac{2\pi}{k} = \frac{2\pi}{\beta}$

$v = \frac{\omega}{k} = \frac{\alpha}{\beta}$

49. Ans (2)

NCERT-XI, Part-II, Pg. # 287



Phase indicator diagram of water shows

(a) P ↑ BP ↑

(b) P ↑ MP ↓

Also heat is a form of energy that flows. Once it enters a body it is not called heat, infact it is called energy. So heat can never be stored.

Sublimation is process of converting vapours into solid.

50. Ans (3)

$Q_1 = Q_2$

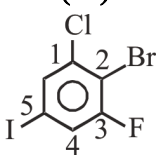
$x\ S_1\ t_1 = y\ S_2\ t_2$

$\frac{S_1}{S_2} = \frac{y}{x}\frac{t_2}{t_1}$

SUBJECT : CHEMISTRY

SECTION - A

57. Ans (2)

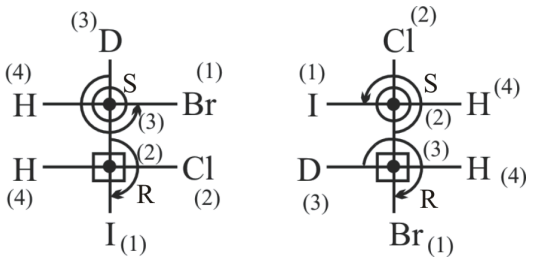


$\Rightarrow$ 2–Bromo–1–chloro–3–fluoro–5–iodo benzene

59. Ans (1)

Side chain nature is different.

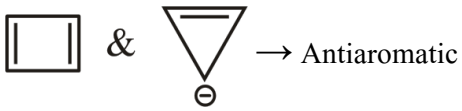
65. Ans (1)



67. Ans (1)

due to more H and +I effect

69. Ans (3)



76. Ans (1)

Theory based NCERT Page No. 354

77. Ans (3)

Kjeldahl method cannot be used in detection of nitrogen in compound with nitro group, azo group and nitrogen in ring.

85. Ans (2)

NCERT Pg : 322

SECTION - B

91. Ans (3)

In ethylene glycol, Gauche form is most stable than anti staggered due to H-bonding.

98. Ans (2)

$2CH_4 + O_2 \xrightarrow[\Delta]{MO_2O_3} HCHO$

SUBJECT : BOTANY

SECTION - A

101. Ans (4)

NCERT XI Pg. # 135

102. Ans (1)

NCERT, Pg. # 138

103. Ans (4)

NCERT-XI Pg. # 136

104. Ans (2)

NCERT XI Pg. # 141

105. Ans (4)

NCERT Pg. # 140

106. Ans (1)

NCERT XI Pg. # 139

107. Ans (2)

NCERT Pg. # 147

108. Ans (2)

NCERT XI Pg. # 143, 144

109. Ans (3)

NCERT XI Pg. # 143, 146

110. Ans (1)

NCERT XI Pg. # 145

111. Ans (4)

NCERT-XI, Pg. # 150

112. Ans (3)

NCERT-XII, Pg. # 149

113. Ans (1)

NCERT-XI Pg. No. 149

114. Ans (1)

NCERT XI Page 150

115. Ans (4)

NCERT Pg # 159

116. Ans (2)

NCERT XI, Pg. # 155, 156

117. Ans (2)

NCERT-XII, Pg. # 158

118. Ans (1)

NCERT Pg. # 158

119. Ans (4)

NCERT XI Pg. # 159

120. Ans (3)

NCERT XI Pg # 156

121. Ans (2)

NCERT, Pg. # 158, 160

122. **Ans (3)**
NCERT XI Pg. # 157

123. **Ans (1)**
NEW NCERT-XI, Pg. # 160

124. **Ans (1)**
NCERT, Page No. 156, 157

125. **Ans (4)**
NCERT XI Pg. # 161

126. **Ans (3)**
NCERT, Pg. # 159

127. **Ans (2)**
NCERT XI Pg. # 171

128. **Ans (1)**
NCERT XI Pg. # 167

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

130. **Ans (3)**
NCERT XI Page # 169

131. **Ans (1)**
NCERT XI Pg. # 170

132. **Ans (1)**
NCERT Pg. # 177

133. **Ans (2)**
NEW NCERT Pg. # 176

134. **Ans (1)**
NCERT Pg. # 176

135. **Ans (1)**
NCERT Pg. # 177, 178

SECTION - B

136. **Ans (1)**
NCERT-XII, Pg. # 135, 137

137. **Ans (4)**
NCERT Pg. # 140 (E), 139, 40, 41 (H)

138. **Ans (2)**
NCERT Pg. # 144, 145

139. **Ans (4)**
NCERT XI Pg. # 146

140. **Ans (4)**
NCERT XI Pg. # 154

142. **Ans (4)**
NCERT Pg. # 159, 160

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

144. **Ans (3)**
NCERT XI Pg. # 158,160

145. **Ans (1)**
NCERT XI Pg. # 156

146. **Ans (1)**
NCERT XI Pg. # 168

147. **Ans (2)**
NCERT XI Pg. # 168

148. **Ans (3)**
NCERT, Pg. # 173-175

149. **Ans (2)**
NEW NCERT Pg. # 175

150. **Ans (3)**
NCERT Pg. # 175, 176, 177

SUBJECT : ZOOLOGY

SECTION - A

151. **Ans (3)**
NCERT Pg # 231, 232

152. **Ans (1)**
NCERT Pg. # 316

153. **Ans (2)**
NCERT Pg. No. # 236

155. **Ans (2)**
NCERT Pg. No. # 231

156. **Ans (3)**
NCERT Pg. # 231, 245

163. Ans (3)
NCERT Pg. # 245,247

164. Ans (1)
NCERT Pg. # 248

165. Ans (3)
NCERT Pg. # 242, 243

167. Ans (4)
NCERT Pg. # 241, 242

174. Ans (1)
NCERT-XI Page No. 226

175. Ans (1)
NCERT Pg. # 218

177. Ans (1)
NCERT Pg. # 227

178. Ans (2)
NCERT Pg. # 225

SECTION - B

188. Ans (1)
NCERT Pg. No. # 223

189. Ans (1)
NCERT Pg. No. # 224, 225

190. Ans (2)
NCERT Pg. # 243,245,247

191. Ans (3)
NCERT Pg. # 244, 245

195. Ans (3)
NCERT-XII, Pg. # 331

196. Ans (3)
NCERT Pg # 232

197. Ans (4)
NCERT XI, Pg. # 233