CLASSROOM CONTACT PROGRAMME
(Academic Session : 2024 - 2025)

ENTHUSIAST COURSE
PHASE : MEA,B,C,D,F,G,H,L,M,N,O,P,Q,R,S,U & V
TARGET : PRE MEDICAL 2025

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

TEST DATE : 06-01-2025

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

HINT – SHEET

1. Ans (4)

$\vec{A} \cdot \vec{B} = 0$

$\cos \omega t \cos \frac{\omega t}{2} + \sin \omega t \sin \frac{\omega t}{2} = 0$

$\cos\left(\omega t - \frac{\omega t}{2}\right) = 0 \Rightarrow \cos \frac{\omega t}{2} = 0$

$\Rightarrow \frac{\omega t}{2} = \frac{\pi}{2} \Rightarrow t = \frac{\pi}{\omega}$

2. Ans (3)

$L + B = 4.431$

4.4 (No. S.D 1 after decimal)

3. Ans (2)

$P = FV$

$P = F\frac{\ell}{t}$

$\ell = \frac{P\ell}{F} = \frac{(10^6 W)(10^{-3} s)}{10N}$

$= 10^2$ m

4. Ans (1)

$\sqrt{\frac{GM}{R+h}} \Rightarrow \left[\frac{[M^{-1}L^3T^{-2}][M^1]}{[L^1]}\right]^{\frac{1}{2}}$

$\Rightarrow L^1T^{-1} \Rightarrow$ Velocity (v)

5. Ans (4)

$\frac{\Delta x}{x} = 1\% = 10^{-2}$

$\frac{\Delta y}{y} = 3\% = 3 \times 10^{-2}$

$\frac{\Delta z}{z} = 2\% = 2 \times 10^{-2} \qquad \Rightarrow t = \frac{xy^2}{z^3}$

$\frac{\Delta t}{t} = \frac{\Delta x}{x} + \frac{2\Delta y}{y} + \frac{3\Delta z}{z}$

$= 10^{-2} + 2 \times 3 \times 10^{-2} + 3 \times 2 \times 10^{-2}$

$= 13 \times 10^{-2} = 13\%$

6. Ans (4)

Diameter = (M.S.R. + C.S.R × L.C.) − Z.E.

= (3 + 35 × (0.5/50)) − (−0.03)

= 3.38 mm

7. Ans (3)

$F_g = \frac{Gm_1m_2}{r^2}$, G = Dimensional constant

Unit of G is $\frac{N - m^2}{Kg^2}$

8. Ans (1)

$\vec{v} = \frac{dx}{dt}\hat{i} + \frac{dy}{dt}\hat{j} \Rightarrow 3\hat{i} + 6x\hat{j}$

$\therefore \frac{dx}{dt} = 3$ ...(1)

$\frac{dy}{dt} = 6x$ ...(2)

$\int dx = \int 3dt$

$x = 3t + C_1$

at t = 0 particle is projected from origin

$\therefore C_1 = 0$

$\boxed{x = 3t}$ ...(3)

$\frac{dy}{dt} = 6(3t) = 18t$

$\int dy = \int 18t\, dt$

$y = \frac{18t^2}{2} + C_2$

$C_2 = 0$

$\therefore \boxed{y = 9t^2}$ ...(4)

from equation (3) and (4)

$y = (3t)^2$

$\boxed{y = x^2}$

9. Ans (1)

From the given v–x graph :-

$v = -kx + v_0$

$a = v\frac{dv}{dx}$

$a = (-kx + v_0)(-k)$

$\boxed{a = kx - kv_0}$

$\downarrow$

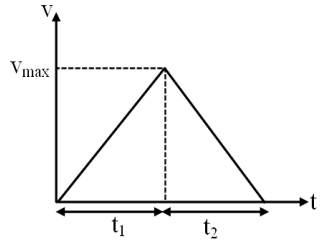
$y = mx + c$

$m \Rightarrow +ve$

$c \Rightarrow -ve$

$\therefore$ option (1) is correct

10. Ans (3)



slope of v – t graph = acceleration

$\therefore \alpha = \frac{v_{max}}{t_1}$ and $\beta = \frac{v_{max}}{t_2}$

$t_1 + t_2 = \frac{v_{max}}{\alpha} + \frac{v_{max}}{\beta}$

$t = v_{max}\left(\frac{\alpha + \beta}{\alpha\beta}\right)$

$\boxed{v_{max} = \left(\frac{\alpha\beta}{\alpha + \beta}\right)t}$

11. Ans (2)

$F = (m_1 + m_2 + m_3)\, g \sin\theta$

$g \sin\theta = \frac{F}{m_1 + m_2 + m_3}$

$N = m_3\, g \sin\theta$

$= \frac{m_3F}{m_1 + m_2 + m_3}$

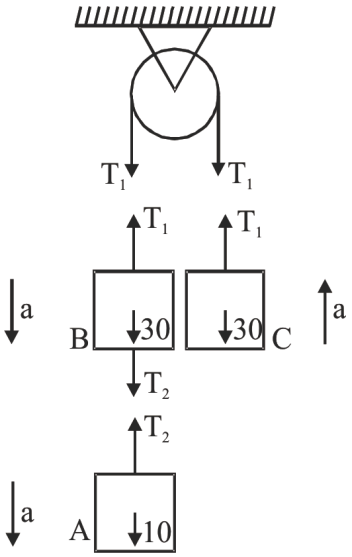
12. Ans (2)

$v_i = -v\cos 60^o\hat{i} - v\sin 60^o\hat{j}$

$v_f = -v\cos 60^o\hat{i} + v\sin 60^o\hat{j}$

$\therefore \quad v = v_f - v_i = +2 \times 20 \times \frac{\sqrt{3}}{2} = 20\sqrt{3}\, ms^{-1}$

13. Ans (3)



$10 - T_2 = 1\, a$ [Newton's II law for A]

$T_2 + 30 - T_1 = 3a$ [Newton's II law for B]

$T_1 - 30 = 3a$ [Newton's II law for C]

$\Rightarrow a = \frac{g}{7} \quad \Rightarrow \quad T_2 = \frac{6g}{7}$

14. Ans (2)

$I = \Delta P = (20t^2 - 40t)\ (kg\ ms^{-1})$

for I_{min} or ΔP_{min}

$\frac{dI}{dt} = 0$ and $\frac{d^2I}{dt^2} > 0$

$\frac{dI}{dt} = 40t - 40 = 0$

$t = 1$ sec

$\frac{d^2I}{dt^2} = +40 > 0$

$\therefore \Delta P_{min}$ at $t = 1s$

15. Ans (4)

$W = \mu_s N$

$\Rightarrow 0.2 \times 10$

$= 2$ N

16. Ans (1)

$P = \frac{W}{\Delta t}$

older-model :

$W = \frac{1}{2}mv^2 \Rightarrow P_{older} = \frac{mv^2/2}{\Delta t} = \frac{mv^2}{2\Delta t}$

newer-model : $W = \frac{1}{2}m(2v)^2 = \frac{1}{2}(4mv^2)$

$\rightarrow P_{newer} = \frac{4mv^2}{2\Delta t} = 4\frac{mv^2}{2\Delta t}$

Hence the power of the sports car is four times that of the older-model car.

17. Ans (3)

$W_F = \frac{100 \times 11}{2} = 550$

By WET

$550 - 50\ y_{max} = 0$

$y_{max} = 11$m.

18. Ans (2)

$x_c = \int_0^L x^4 dx / \int_0^L x^3 dx = \frac{L^5}{5} / \frac{L^4}{4} = \frac{4}{5}L$

19. Ans (3)

Newton's Craddle

20. Ans (4)

As stress is shown on x - axis and strain on y - axis.

So, we can say that $Y = \cot\theta = \frac{1}{\tan\theta} = \frac{1}{\text{slope}}$.

So elasticity of wire P is minimum and of wire R is maximum.

21. Ans (4)

$\vec{r} = v_0[\cos\omega t\hat{i} + \sin\omega t\hat{j}]$

$\Rightarrow \omega = \pi$

and $a_c = \omega^2 R = \omega^2 r_0 = 15\pi^2$

22. Ans (2)

$\tau = I\alpha = I\left|\frac{\Delta\omega}{t}\right| = 2 \times \frac{2\pi \times 1}{60} = \frac{\pi}{15}$ N − m

23. Ans (2)

$I_A > I_B$. Also $\tau = I\alpha \Rightarrow \alpha \propto \frac{1}{I}$

So, $\alpha_A < \alpha_B$

24. Ans (4)

Mass of wire will be $M = \rho L$

so radius $r = \frac{L}{2\pi}$

So moment of inertia $= I = \frac{Mr^2}{2} + Mr^2 = \frac{3}{2}Mr^2$

$I = \frac{3}{2}[\rho L]\left[\frac{L^2}{4\pi^2}\right]$

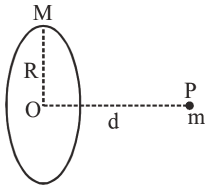
$\boxed{I = \frac{3}{8}\frac{\rho L^3}{\pi^2}}$

25. Ans (1)

$\vec{I} = -\frac{\partial V}{\partial x}\hat{i} - \frac{\partial V}{y}\hat{j} - \frac{\partial V}{\partial z}\hat{k}$

$= \hat{i} + \hat{j} + \hat{k}$

26. Ans (3)



$F_{axis} = \frac{GMmd}{(R^2 + d^2)^{3/2}}$

when d = R then

$F = \frac{GMmR}{(R^2 + R^2)^{3/2}} = \frac{GMm}{2\sqrt{2}R^2}$

28. Ans (4)

A−s, B−r, C−p, D−q

29. Ans (1)

$W = \frac{1}{2}F\Delta\ell = \frac{1}{2}\frac{AY}{L}(\Delta\ell)^2$

$W \propto \frac{A}{L} \propto \frac{r^2}{L}$

$\frac{W_2}{W_1} = \left(\frac{2r}{r}\right)^2 \times \left(\frac{L}{L/2}\right) = 8$

$W_2 = 8W_1 = 16$J

30. Ans (3)

$P_{excess} = \rho gh$

$\frac{mg}{A} = \rho gh \Rightarrow h = \frac{m}{\rho A} = 15$ cm

31. Ans (3)

Work done = surface tension × change in area

Since volume will remain equal

Let us assume radius of new drop = r each

$\Rightarrow \quad \frac{4}{3}\pi R^3 = 64 \times \frac{4}{3}\pi r^3$

$\Rightarrow \quad \frac{R}{4} = r$

$W = T \cdot \Delta A$

$= T[n \times 4\pi r^2 - 4\pi R^2]$

$= T\left[64 \times 4\pi\left(\frac{R}{4}\right)^2 - 4\pi R^2\right] = 12\pi R^2 T$

32. Ans (2)

In floating of block, the weight of displaced water will be equal to weight of block. If level is same then both beakers will have same weight. Reason is false, as volume of block will be more as compared to displaced water.

33. Ans (3)

$h \times 1000 \times g = \frac{2}{100} \times 13600 \times g$

or $\quad h = \frac{2 \times 13.6}{100} m = 27.2$ cm

34. Ans (2)

Given, terminal velocity $v = 1\ ms^{-1} = 100\ cms^{-1}$

radius of the raindrop, $r = 0.3$ mm $= 0.3 \times 10^{-1}$

Viscosity of air $\eta = 18 \times 10^{-3}$ Poise

$\therefore$ Viscous force, $F = 6\pi\eta rv$

$= 6 \times 3.14 \times 18 \times 10^{-3} \times 0.3 \times 10^{-1} \times 100$

$= 1017.36 \times 10^{-3}$ dyne $= 101.73 \times 10^{-2}$ dyne.

35. Ans (1)

$1000 \times 2 \times 60 = 6 \times C$

$\Rightarrow C = 2 \times 10^4$ J/°C

36. Ans (2)

Transmitting power + Absorbtion power + Reflection power = 1

Absorptive power = 0.5 $\Rightarrow \frac{Q}{Q_{Total}}$

$Q = 0.5 \times Q_{Total} = 0.5\ [\sigma AT^4]$

$= 0.5 \times 5.67 \times 10^{-8} \times 0.15 \times 500^4$

$Q = 265.78$ W.

37. Ans (3)

Work = Area under P-V diagram $\Rightarrow$ with volume axis $W \Rightarrow \frac{1}{2} \times (2-1) \times (10-4) \Rightarrow 3J$

$W = +3J$ [Volume increasing]

38. Ans (2)

As $\alpha_A > \alpha_B$ so contraction in metal A is more than metal B.

39. Ans (1)

$PV^\gamma =$ constant

$\frac{\Delta P}{P} = -\gamma\frac{\Delta V}{V}$

$\Rightarrow \frac{\Delta P}{P} \times 100 = -\gamma\frac{\Delta V}{V} \times 100$

$\Rightarrow \frac{2}{3} = -\frac{3}{2} \times \left(\frac{\Delta V}{V} \times 100\right)$

$\therefore \frac{\Delta V}{V} \times 100 = -\frac{4}{9}$

40. Ans (2)

$a = \omega^2 A \Rightarrow 125 = \omega^2(5) \Rightarrow \omega = 5, T = \frac{2\pi}{5}$

42. Ans (2)

$T = 2\pi\sqrt{\frac{m}{R}} \Rightarrow T \propto \sqrt{m}$

$\Rightarrow \frac{T'}{4} = \sqrt{\frac{900}{1600}} \Rightarrow T' = 3s$

43. Ans (4)

$V_{particle} = -\text{slope} \times V_{wave}$

44. Ans (2)

$f_0 = \frac{v}{2L} = 500$Hz

$f_n = nf_0 \Rightarrow 1000 = n \times 500$

$n = 2$

48. Ans (4)

s-block = $\underline{ns^2}$, d-block = $(n-1)d^{1-10}\ \underline{ns^{1-2}}$

p-block = $\underline{ns^2np^6}$,

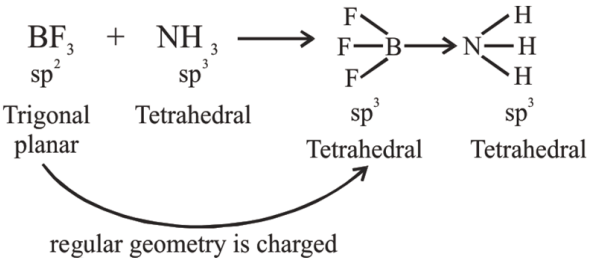
f-block = $(n-2)\ f^{1-14}\ (n-1)d^{0,.1}\ \underline{ns^2}$

52. Ans (4)

If Z = same then

IP $\propto \oplus$ve charge

54. Ans (3)



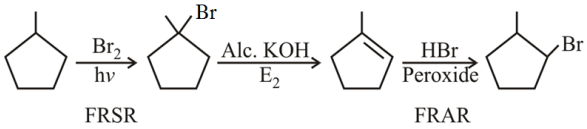
57. Ans (1)

$O = \underset{sp}{C} = \underset{sp}{C} = \underset{sp}{C} = O$

60. Ans (1)

Both XeF_2 & IF_2^- have sp^3d hybridisation & having linear shape.

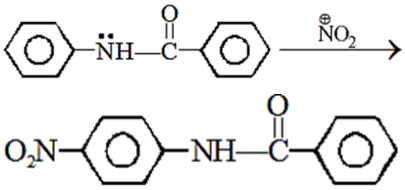
67. Ans (3)



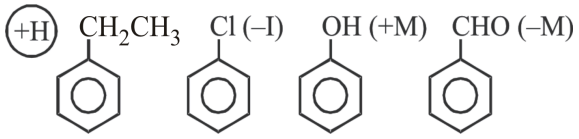
68. Ans (3)

If –I/–M group is attached directly to benzene then it never gives FCR.

69. Ans (4)



70. Ans (4)

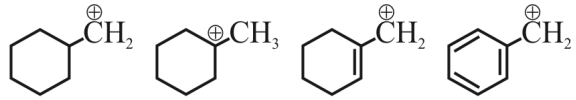


Reaction towards

ESR $\longrightarrow$ + M > + H > + I > –I > – H > – M

71. Ans (4)

IV > III > II > I



Reso(-)n^+ (1°) Reso(-)n^+ (3°) Reso↑ Reso↑↑

72. Ans (3)

All atoms have complete octet

III

74. Ans (1)

While testing for halogens, lassaigne's extract is boiled with conc. HNO_3 to decompose Na_2S and NaCN if formed.

76. Ans (2)

eq (2) × 3 – eq(1) = eq (3)

$(-110) \times 3 - (-1130) = \Delta H$

$\Delta H = +800$ kJ

77. Ans (1)

$$T_{eq} = \frac{\Delta H}{\Delta S} = \frac{20000\ J\ mol^{-1}}{20\ J\ K^{-1}mol^{-1}}$$

= 1000 K. = 727°C

Since ΔH and ΔS both are positive, so The reaction will be spontaneous only when $T\Delta S > \Delta H$ and this is possible only above equilibrium temperature.

79. Ans (1)

Radial nodes for a subshell is = n – ℓ – 1

80. Ans (2)

$$(K_C)_{forward} = \frac{1}{(K_C)_{reverse}}$$

$$(K_C)_{reverse} = \frac{1}{6 \times 10^{14}} = 1.6 \times 10^{-15}$$

81. Ans (2)

$$K_p = \frac{(P_{CO_2})}{(P_{CH_4})\,(P_{O_2})^2}$$

82. Ans (1)

$Bi_2S_3 \longrightarrow 2Bi^{+3} + 3S^{-2}$

$CdS \longrightarrow Cd^{+2} + S^{-2}$

$Al(OH)_3 \longrightarrow Al^{+3} + 3OH^-$

$CaF_2 \longrightarrow Ca^{+2} + 2F^-$

83. Ans (4)

KCN is a WA - SB salts

84. Ans (4)

NCERT Pg. # 192

All of these can accept electron pair.

85. Ans (1)

g-equivalent $CaCO_3$ = g-equivalent HCl

$$n \times \frac{w}{M_w} = n \times \frac{mv(\ell)}{1000}$$

$$2 \times \frac{w}{100} = \frac{1 \times 0.5 \times 200}{1000}$$

$w = 5$ g

$$\% \text{ Purity} = \frac{\text{Pure amount} \times 100}{\text{Total amount}}$$

$$\text{Total } CaCO_3 = \frac{5}{80} \times 100 = 6.25 \text{ g}$$

86. Ans (2)

C H

$\frac{80}{12}$ $\frac{20}{1}$

$2 \times V.D = M_w$

88. Ans (3)

$CH_4(g) + 2O_2(g) \longrightarrow CO_2(g) + 2H_2O(\ell)$

$\Delta ng = 1 - 3 = -2$

$\Delta ng = -2$

$\Delta H^\circ = \Delta E^\circ - 2RT$

89. Ans (4)

NH_3 forms soluble complex with Ag^+ ions.

90. Ans (4)

path of electron in atom is not clearly defined.

91. Ans (1)

NCERT XI Pg # 6

92. Ans (2)

NCERT XI Pg # 4

93. Ans (3)

NCERT XI Pg # 6

94. Ans (2)

NCERT XI Pg # 23

97. Ans (1)

NCERT XI Pg. # 14

98. Ans (3)

NCERT XI Pg. # 18

99. Ans (4)

NCERT (XI) Pg # 31

100. Ans (1)

NCERT XI - P. No. - 29

101. Ans (2)

NCERT XI Pg. # 32

102. Ans (4)

NCERT XI Pg. # 28

103. Ans (3)

NCERT XI Pg. # 28, 29, 30, 31, 32, 34

104. Ans (3)

NCERT XI Pg. # 26 (E), 20 (H)

105. Ans (4)

NCERT XI Pg # 99

107. Ans (3)

NCERT XI Pg. # 101

108. Ans (4)

XI NCERT Pg. No # 100

109. Ans (1)

NCERT XI, Pg. # 125, 126

110. Ans (2)

NCERT (XI) Pg # 126

111. Ans (3)

NCERT XI Pg. # 127

112. Ans (3)

NCERT XI Pg # 121

113. Ans (2)

NCERT XI Pg # 123

114. Ans (4)

NCERT-XI, Pg. # 124

115. Ans (1)

NCERT XI Pg. # 122

116. Ans (2)

NCERT XI Pg # 110

117. Ans (4)

NCERT XI Page # 110, Fig. 9.2

118. Ans (4)

NCERT XI Pg. # 107

119. Ans (1)

NCERT XI Pg. # 116

120. Ans (1)
NCERT XI Pg. # 116 (fig. 9.5 C)

121. Ans (2)
NCERT XI Pg. # 117

122. Ans (1)
NCERT XI Pg. No. # 136

123. Ans (2)
NCERT-XI, Pg # 144-145

124. Ans (1)
NCERT XI Pg. # 138

125. Ans (1)
NCERT-XI, Pg. # 137

126. Ans (4)
NCERT XI, Page No # 138

127. Ans (1)
NCERT XI Pg. # 155, 159

128. Ans (3)
NCERT XI Pg. # 158

129. Ans (1)
NCERT-XI, Pg. # 154

130. Ans (1)
NCERT XI Pg # 154

131. Ans (2)
NCERT-XI Pg. # 161

132. Ans (4)
NCERT XI Pg. # 170

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

134. Ans (2)
NCERT-XI, Pg. # 175, 176

135. Ans (4)
NCERT XI Pg. No :- 176, 177, 178

137. Ans (2)
NCERT, Pg. # 53-54

138. Ans (3)
NCERT, Pg # 44

142. Ans (3)
NCERT Pg.# 78

148. Ans (2)
NCERT Pg # 193

149. Ans (3)
NCERT Pg. # 189

150. Ans (1)
NCERT Pg. # 190

151. Ans (3)
NCERT Pg. # 185,186

152. Ans (1)
NCERT Pg # 207

154. Ans (1)
NCERT-XII, Pg. # 321

156. Ans (3)
NCERT XI Pg. # 232

157. Ans (1)
NCERT Pg. # 318

159. Ans (1)
NCERT Pg. # 334

163. Ans (3)
NCERT Pg. No. # 220

165. Ans (3)
NCERT Pg.#303-304

166. Ans (1)
NCERT, Pg # 225

171. Ans (1)
NCERT Page No. # 53
Hint external ear pinna present only in mammals.

172. Ans (3)
NCERT, Pg # 49

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

175. Ans (2)
NCERT Pg.#275

176. Ans (4)
NCERT XI Pg. # 233