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 : 24-01-2025

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

HINT – SHEET

1. Ans (2)

$\omega = 2nf = 2\pi \times \frac{60}{60} = 2\pi$ rad/s

Given $I = 2$ kg m^2 & $t = 60$ sec.

$\omega_f = \omega_i + \propto t$

$0 = 2\pi + \propto \times 60$

$\Rightarrow \propto = -\frac{\pi}{30}$ rad/s^2

Now, $\tau = I \propto = 2 \times \frac{\pi}{30}$

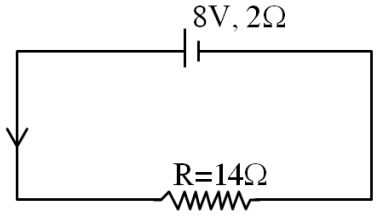
$\Rightarrow \tau = \frac{\pi}{15}$ N.m

2. Ans (3)

$I_{AB} = \frac{m(2R)^2}{3} + \left[\frac{mR^2}{2} + m(3R)^2\right]$

$= \frac{65mR^2}{6}$

3. Ans (2)



Equivalent resistance of cells

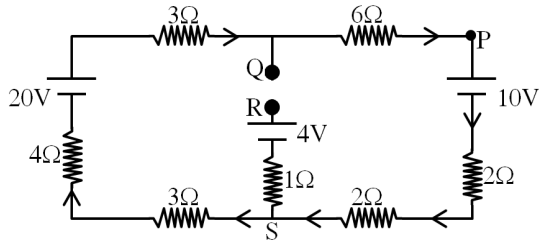
$= \frac{(3)(6)}{(3+6)} = 2\Omega$

Ex. emf $= E_{eq.} = \left(\frac{E_1}{r_1} + \frac{E_2}{r_2}\right) r_{eq.}$

$E_{eq.} = \left(\frac{12}{6} + \frac{6}{3}\right) \times 2 = 8V$

$i = \frac{8}{14+2} = 0.5A$.

4. Ans (4)



No current will flow in branch RS as this branch is open circuit. Current in main loop.

$$I = \frac{20-10}{(3+6+2+2+3+4)} = \frac{10}{20} = 0.5A$$

KVL from P to R

$$V_P - 10 - 2(0.5) - 2(0.5) + 1(0) + 4 = V_R$$

$$V_P - V_R = 8V.$$

6. Ans (1)

$$\tau = PE\sin\theta$$

$$\tau = 4 \times 10^{-9} \times 5 \times 10^4 \times \frac{1}{2}$$

$$= 10^{-4}\ \text{N.m}$$

7. Ans (3)

$$W.D = (K.E)_P + (PE)_P$$

$$-4 = \frac{1}{2}(2)(10)^2 + 2V_P$$

$$V_P = -\frac{104}{2}$$

$$V_P = -52\ \text{J/Kg.}$$

8. Ans (3)

$$\because T^2 \propto R^3$$

$$\therefore T \propto R^{3/2}$$

$$\frac{dT}{T} = \frac{3}{2}\frac{dR}{R} \quad \text{---------- (1)}$$

$$\% \text{ change in Radius} = \frac{2.03R - 2R}{2R}$$

$$= 0.015 \times 100$$

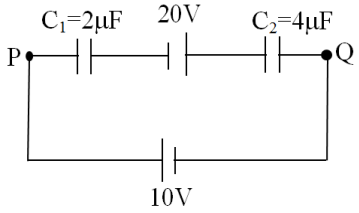
$$= 1.5\ \%$$

By eq. (1)

$$\frac{dT}{T} \times 100 = \left(\frac{3}{2} \times 1.5\right)\% = 2.25\%$$

9. Ans (3)

Both battery are in series & both capacitors are also in series as per shown figure.



$$\therefore V_{C_1} = \frac{Q}{C_1} = \frac{C_{eff} \times V_{eff}}{C_1}$$

$$= \frac{\frac{C_1C_2}{C_1+C_2} \times V\,eff}{C_1} = \frac{C_2}{C_1+C_2} \times V_{eff}$$

$$= \frac{4}{2+4} \times 30 = 20\ V$$

10. Ans (4)

$$K = \frac{P^2}{2m}$$

$$P = \sqrt{2mK}$$

$$P = \sqrt{2m(3K)} = \sqrt{3P}$$

$$\frac{\Delta P}{P} \times 100\% = \frac{P' - P}{P} \times 100\%$$

$$= (\sqrt{3} - 1) \times 100\%$$

$$= 0.7321 \times 100\%$$

$$= 73.21\%$$

11. Ans (1)

$$\frac{(KE)_{SI}}{(KE)_{CGS}} = \frac{\text{Joule}}{\text{erg}} = \frac{10^7\text{erg}}{\text{erg}} = 10^7$$

12. Ans (3)

As per the rules of Significant figures.

13. Ans (4)

$$r_{COM} = \frac{\int dm.\,r}{\int dm} = \frac{\int_0^L \rho_0\left(1 - \frac{x}{L}\right)dx.\,x}{\int_0^L \rho_0\left(1 - \frac{x}{L}\right)dx}$$

$$\Rightarrow \frac{\left[\frac{x^2}{2} - \frac{x^3}{3L}\right]_0^L}{\left[x - \frac{x^2}{2L}\right]_0^L} = \frac{L}{3}$$

14. Ans (4)

Potential difference across $R_L = 2k\Omega$ is

$$v = \frac{2k}{1k + 2k} \times 15$$ By potential divider Rule

V = 10 volt

As $V < V_z = 12$ volt

so zener diode is not in breakdown region so current through zener is zero.

15. Ans (1)

Factual

Cu is conductor so with increase in temperature, resistance will increase

Si is semiconductor so with increase in temperature resistance will decrease

16. Ans (1)

When all input of NAND gates one connected together, the resulting circuit is NOT gate

17. Ans (2)

$a = \frac{(10-5)}{15}g = g/3$

From block of 10 kg

$10g - T = 10(a)$

$T = 10(g-a) = \frac{200}{3}N = \frac{20}{3}kgf$

18. Ans (1)

$V = a + \beta t^2$

$\frac{dx}{dt} = \alpha + \beta t^2$

$\int_0^x dx = \int_0^1 (\alpha + \beta t^2)\, dt$

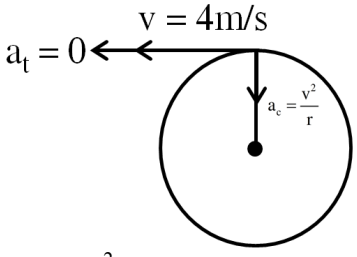
$x = \alpha + \frac{1}{3}\beta$

19. Ans (2)

Displacement = Area covered by graph

$= +\frac{1}{2}.(1+5)4 + \frac{1}{2}.1.(-2) = 11m$

20. Ans (3)



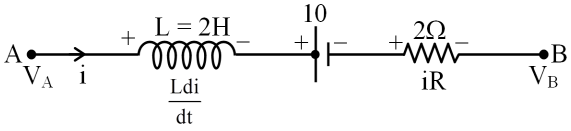
$\therefore a_c = \frac{v^2}{r} = \frac{16}{2} = 8m/s^2$

21. Ans (2)

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

$= \frac{2\pi}{\pi \times 10^3} = 2 \times 10^{-3}\, m = 2mm$

22. Ans (4)



Appling KVL,

$V_A - \frac{Ldi}{dt} - 10 - iR = V_B$

$V_A - V_B = 2(3) + 10 + 2 \times 2$

$V_A - V_B = 20\,volt$

23. Ans (4)

$P = V_{rms}\, I_{rms} \cos\phi$

$= 20 \times 10 \times \cos\phi$

Value of $\cos\phi$ will be between 0 to 1

24. Ans (4)

Since, linear momentum is a vector quantity, so that photons having equal wave length, have equal magnitude of linear momentum but may be different in directions.

25. Ans (2)

$\because K_{max} = ((hf) - \phi) \propto V^2$

i.e. $\frac{V_1}{V_2} = \sqrt{\frac{(hf)_1 - \phi}{(hf)_2 - \phi}}$

$\frac{V_1}{V_2} = \sqrt{\frac{4\phi - \phi}{6\phi - \phi}} \Rightarrow \sqrt{\frac{3}{5}}$

26. Ans (2)

According to theory,

$\Rightarrow$ volume $\propto$ mass number

$\Rightarrow$ Radius $\propto$ (mass number)$^{1/3}$

$\Rightarrow$ density is independent from mass number

27. Ans (4)

$_{110}X^{220} \xrightarrow{3\alpha} {}_{104}X_1^{208} \xrightarrow{4\beta^-} {}_{108}X_2^{208} \xrightarrow{3\beta^+} {}_{105}Y^{208}$

28. Ans (1)

$M = iA = \frac{ev}{2\pi r} \times \pi r^2 = \frac{evr}{2}$

$\because mvr = \frac{nh}{2\pi}$, then $M = \frac{e}{2}\left(\frac{h}{2\pi m}\right) = \frac{he}{4\pi m}$

29. Ans (4)

The magnetic force on a moving charge $\vec{F} \perp \vec{V}$

$\therefore$ Power

$P = F\,V\cos 90° = 0$

$\therefore$ Work done $W = 0$

$\therefore\ \Delta kE = W = 0$

$\Rightarrow$ KE = constant

30. Ans (3)

ℓ

$B = 4B_0$

$B_0 = \dfrac{\mu_0 i}{4\pi d}(\sin\alpha + \sin\beta)$

$B_0 = \dfrac{\mu_0 I}{2 \times 2\pi d}\ (\sqrt{2}) \Rightarrow \dfrac{\mu_0 i}{2\pi\ell}\sqrt{2}$

$B = 4B_0 = 4\left(\dfrac{\mu_0 i}{2\pi\ell}\sqrt{2}\right)$

$B = \dfrac{\mu_0 i(2\sqrt{2})}{\pi\ell}$

4ℓ

$2\pi r = 4\ell$

$r = \dfrac{2\ell}{\pi}$

$B' = \dfrac{\mu_0 i}{2r} = \dfrac{\mu_0 i\pi}{4\ell}$

$\dfrac{B}{B'} = \dfrac{8\sqrt{2}}{\pi^2}$

31. Ans (3)

$Q = nC\Delta T$

For polytropic process $C = C_v + \dfrac{R}{1-x}$

Process $TP^{-2/5}$ = constant

$(PV)\,P^{-2/5}$ = constant

$PV^{5/3}$ = constant

$\therefore\ C = \dfrac{3R}{2} + \dfrac{R}{1-5/3} = 0$

$\because\ Q = nC\Delta T$ as $C = 0$

$\therefore\ Q = 0$

32. Ans (2)

$\because\ Q = ms\Delta T = \dfrac{4}{3}\pi r^3 \rho S \Delta T$

$\therefore$ For same material (same ρ and s) and for same ΔT : $Q \propto r^3$

$\Rightarrow \dfrac{Q_1}{Q_2} = \dfrac{r_1^3}{r_2^3} = \left(\dfrac{2r_2}{r_2}\right)^3$

$\Rightarrow Q_1 : Q_2 = 8 : 1$

33. Ans (2)

$\dfrac{Q}{t} = \dfrac{KA\Delta T}{\ell} = 10\,\text{Watt}$

$K = \dfrac{10 \times \ell}{A\,\Delta T} = \dfrac{10 \times 5}{0.5 \times 10^{-4} \times 50}$

$K = \dfrac{50 \times 10^4}{25}$

K = 20000 W/m/K

35. Ans (4)

$x = 2\sin^2\left(2\pi t - \dfrac{\pi}{4}\right)$

$\Rightarrow x = 1 - \cos 2\left(2\pi t - \dfrac{\pi}{4}\right)$

$\Rightarrow x = 1 - \cos\left(4\pi t - \dfrac{\pi}{2}\right)$

$\Rightarrow x = 1 - 1\sin 4\pi t$

$\therefore$ A = 1, unit $\omega = 4\pi$ unit

36. Ans (1)

$770 = 110 \times 7$

$990 = 110 \times 9$

7 & 9 are odd multiple of 110 Hz fundamental frequency.

$\therefore$ It is a closed organ pipe.

37. Ans (2)

When incident wave is reflected by a rigid boundary, then the reflected wave undergoes a phase change of 180° or π.

38. Ans (4)

$AC = \sqrt{8^2 + 8^2} = 8\sqrt{2}\text{m}$

$A \longrightarrow D = 8 + 8 + 4 = 20$ m

$\langle\vec{a}\rangle = \dfrac{\vec{v}_f - \vec{v}_i}{t} = \dfrac{\vec{0} - \vec{0}}{t}$

$\overrightarrow{BF} = \left(2\hat{i} + 10\hat{j}\right) - \left(10\hat{i} + 2\hat{j}\right)$

39. Ans (2)

Since $A_A = A_B$

$V_A = V_B$

$P + \rho gh + \dfrac{\rho V^2}{2} = \text{constant}$

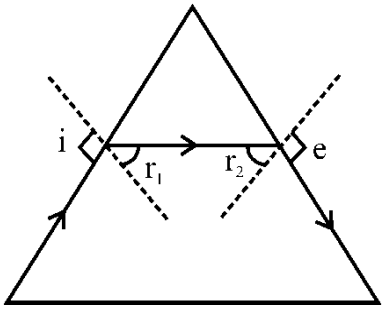
40. **Ans (1)**

$m_{max} \cdot g = 2T\ell$

41. **Ans (2)**

$r = \frac{r_1 r_2}{r_1 - r_2} = \frac{5 \times 4}{5 - 4} = 20$ cm

42. **Ans (2)**

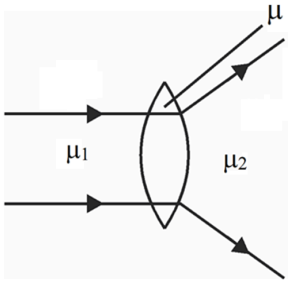


$r_1 = r_2 = 30°$

$\mu = \frac{1}{\sin r_1}$

$\mu = 2$

43. **Ans (3)**



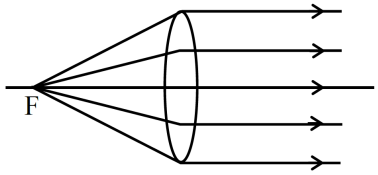
$\mu = \mu_1$; rays pass undiverted

As rays bend towards normal, $\mu_2 > \mu$

44. **Ans (4)**

Light emerges parallel

$\therefore$ planar wavefront



45. **Ans (1)**

$\frac{6}{0.125} = R + \frac{1}{\left(\frac{1}{8} + \frac{1}{16} + \frac{1}{16}\right)}$

46. **Ans (2)**

NCERT-XI, Pg. # 3

47. **Ans (3)**

NCERT Pg. # 17

48. **Ans (3)**

NCERT, Pg. # 21

49. **Ans (4)**

NCERT-XI, Pg. # 26

50. **Ans (2)**

NCERT Pg. # 31

51. **Ans (4)**

NCERT Pg. # 32

52. **Ans (4)**

NCERT XI Pg. No :- 146, 147

53. **Ans (2)**

XI NCERT Pg. # 143

54. **Ans (3)**

NCERT-XI Pg. No. # 139, 140

55. **Ans (1)**

NCERT XI, Pg.No. # 157

56. **Ans (1)**

NCERT Pg # 158-159

57. **Ans (3)**

NCERT Pg. # 158, 159

58. **Ans (3)**

NCERT XI Pg. # 175, 176, 177

59. **Ans (2)**

NCERT Pg. # 178

60. **Ans (3)**

NCERT XI Pg.No. # 60,61

61. **Ans (2)**

NCERT Pg. # 65

62. **Ans (3)**

NCERT Pg. No. # 64

63. **Ans (2)**

NCERT Pg # 64

64. **Ans (3)**

NCERT Pg. # 62

65. **Ans (2)**

NCERT Pg # 74

66. **Ans (2)**
NCERT Pg. # 76

67. **Ans (2)**
NCERT Pg. # 75

68. **Ans (3)**
NCERT Pg. # 75, 76

69. **Ans (4)**
NCERT Pg. # 71

70. **Ans (1)**
NCERT-XII, 30-31

71. **Ans (4)**
NCERT XII Pg # 20-23

72. **Ans (3)**
NCERT (XII) Pg # 21, 24

73. **Ans (2)**
NCERT XII Pg. # 30, 31

74. **Ans (1)**
XII NCERT Pg # 83, 85

75. **Ans (4)**
XII NCERT Pg # 77

76. **Ans (4)**
NCERT Pg. # 80

77. **Ans (1)**
NCERT XII Pg # 89

78. **Ans (4)**
NCERT XII, Pg. # 70 para-5.3.2

79. **Ans (1)**
XII NCERT Pg # 100, 103

80. **Ans (2)**
NCERT XII Pg # 113

81. **Ans (2)**
NCERT XII Page No. 101,104

82. **Ans (3)**
NCERT XII Pg. # 97,98

83. **Ans (4)**
NCERT-XII, Page No. # 115, 112

84. **Ans (2)**
NCERT XII Pg. No :- 221

85. **Ans (3)**
NCERT XII, Page No. 220

86. **Ans (4)**
NCERT XII Pg. # 196

87. **Ans (1)**
NCERT XII Pg. # 192
Weather, food, predator number effect survival of organisms and population size.

88. **Ans (3)**
NCERT XII, Page No. 210

89. **Ans (3)**
NCERT XII, Pg. # 213

90. **Ans (1)**
NCERT XII, Page No. 209

91. **Ans (2)**
NCERT XII Pg # 49, Fig. 3.8

92. **Ans (2)**
NCERT, Pg # 48,49
Oogenesis already started during foetal life

93. **Ans (3)**
NCERT (XII^{th}) Pg. # 36

94. **Ans (4)**
NCERT - XII Pg. No 45

95. **Ans (4)**
NCERT XII, Pg. # 146,147,149

96. **Ans (1)**
NCERT XII Page # 161

97. **Ans (1)**
NCERT-XII, Pg. # 129

98. **Ans (1)**
NCERT XII_Pg. No. 118

99. **Ans (3)**
NCERT Pg. # 115

100. **Ans (2)**
NCERT-XI, Pg # 95

101. Ans (2)

NCERT XI Pg. No. # 97

102. Ans (3)

NCERT Pg. # 109

103. Ans (1)

NCERT Pg # 152

104. Ans (2)

NCERT, Pg. # 193 - 196

105. Ans (3)

NCERT Pg. # 198

107. Ans (1)

A-peptide and B-peptide peptides are present in mature insulin.

111. Ans (2)

NCERT (XI^{th}) Pg. # 52,54

114. Ans (2)

NCERT Pg. # 288

118. Ans (1)

NCERT XI Page No. # 332

125. Ans (3)

NCERT (Eng.) Pg. # 285

126. Ans (3)

NCERT-XI, Page No.340

129. Ans (2)

NCERT Pg # 212

131. Ans (3)

NCERT Pg. No. 34

132. Ans (4)

NCERT XII Pg. No. # 133, 134

133. Ans (2)

NCERT-XII, Pg. # 141-142

134. Ans (3)

NCERT-XI, Pg # 88

135. Ans (4)

NCERT-XI, Pg.# 121, 122, 124, 125

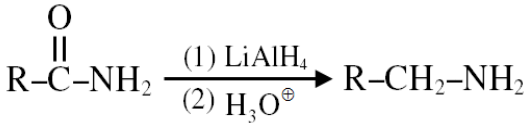
138. Ans (1)

give turbidity after 30 min.

141. Ans (2)

NCERT Reference: Class XI, Part-II, Page No.364

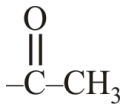
146. Ans (2)



147. Ans (4)

Fact based

148. Ans (2)

Ketones & Aldehyde having  group can give Haloform reaction.

156. Ans (4)

Number of g eq of HCl neutralized = $1 \times 1 \times 1 = 1$

Number of g eq of H_2SO_4 neutralized = $1 \times 2 \times 1 = 2$

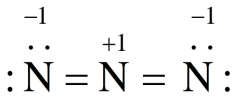
$\boxed{2x = y}$

163. Ans (3)

On increasing temperature k↑

Hence $t_{1/2}$ decreases.

169. Ans (2)



171. Ans (4)

$Na_2Cr_2O_7$ is hygroscopic so don't use is volumetric analysis.

174. Ans (1)

Conductivity ∝ No. of ions

$[Co(NH_3)_6]Cl_3$ = 4 ions

$[Co(NH_3)_5Cl]Cl_2$ = 3 ions

$[Co(NH_3)_4Cl_2]Cl$ = 2 ion

$[Co(NH_3)_3Cl_3]$ = 0 ions.

175. Ans (2)

C.N. = 4 Tetrahedral field not octahedral