# CLASSROOM CONTACT PROGRAMME
(Academic Session : 2024 - 2025)

## PRE-MEDICAL : ENTHUSIAST COURSE PHASE - ENTHUSIAST COURSE

## PHASE : ALL PHASE

## TARGET : PRE MEDICAL 2025

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

## TEST DATE : 01-02-2025

## 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 | 3 | 1 | 4 | 3 | 3 | 4 | 1 | 4 | 3 | 3 | 3 | 2 | 4 | 1 | 1 | 3 | 3 | 2 | 2 | 4 | 3 | 1 | 1 | 3 | 3 | 4 | 4 |
| 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 | 3 | 3 | 3 | 1 | 4 | 1 | 2 | 4 | 3 | 4 | 3 | 2 | 3 | 4 | 2 | 2 | 4 | 3 | 2 | 1 | 1 | 4 | 1 | 1 | 2 | 3 | 4 | 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 | 3 | 4 | 2 | 2 | 3 | 2 | 1 | 2 | 2 | 2 | 2 | 1 | 2 | 1 | 2 | 2 | 4 | 4 | 4 | 4 | 3 | 2 | 2 | 4 | 3 | 4 | 4 | 1 | 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. | 3 | 3 | 3 | 3 | 4 | 1 | 1 | 1 | 3 | 2 | 4 | 3 | 4 | 3 | 1 | 2 | 2 | 3 | 1 | 3 | 2 | 2 | 1 | 1 | 2 | 4 | 2 | 4 | 2 | 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. | 3 | 3 | 3 | 3 | 3 | 3 | 2 | 4 | 3 | 4 | 1 | 4 | 4 | 4 | 3 | 3 | 3 | 2 | 4 | 2 | 2 | 2 | 2 | 4 | 2 | 3 | 4 | 3 | 3 | 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. | 3 | 2 | 4 | 2 | 1 | 3 | 3 | 4 | 3 | 3 | 4 | 1 | 1 | 3 | 1 | 3 | 2 | 4 | 4 | 1 | 4 | 4 | 3 | 3 | 1 | 2 | 3 | 2 | 2 | 1 |

## HINT – SHEET

**1. Ans ( 2 )**

Acidic Nature $\propto$ +ve O.S. of Non-Metal

**2. Ans ( 4 )**

Due to lanthanoid contraction size of 4d $\simeq$ 5d series elements

**3. Ans ( 3 )**

Iodine can show oxidation state from $-1$ to $+7$

**4. Ans ( 3 )**

$B_2$ = Total $el^-$ = 10

$\sigma_{1s}^2\sigma_{1s}^{*2}\sigma_{2s}^2\sigma_{2s}^{*2}$ $[\pi_2 p_x^1 = \pi_2 pp^1]$

B.O = 1 & Paramagnetic

**5. Ans ( 1 )**

$$\text{Ionic character} \propto \frac{1}{\text{Polarising power of cation}}$$

As positive oxidation state increases or, size of cation decreases, polarizing power of cation increases hence, the correct order of ionic character is :

$MCl > MCl_2 > MCl_3$

**6. Ans ( 4 )**

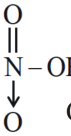
NCERT XIth Pg # 104, Table 4.2

**7. Ans ( 3 )**

$$\text{B. E.} \propto \frac{1}{\text{no. of L. P.}}$$

NCERT XI Pg. # 108 (Part-I)

**8. Ans ( 3 )**



Covalency = 4

**9. Ans ( 4 )**

$\mu = NH_3 > NF_3 > BF_3$

$\mu = 1.47$ D $\mu = 0.24$ D $\mu = 0$

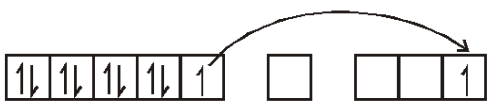
**10. Ans ( 1 )**

Ionisation Isomerism

**11. Ans ( 4 )**

$[Cu(NH_3)_4]^{+2}$

$Cu^{+2} = 4s^0\ 3d^9$



$dsp^2$ , paramagnetic

**12. Ans ( 3 )**

IUPAC

$[Ag(H_2O)_2]\ [Ag(CN)_2]$

Coordination number = 2,

Oxidation state = $Ag^{+1}$

Diaquasilver(I) dicyanidoargentate(I)

**13. Ans ( 3 )**

As per surface area.

**14. Ans ( 3 )**

$NF_3 + H_2O \longrightarrow$ No reaction

**15. Ans ( 2 )**

$$CrO_4^{2-} \underset{OH^-}{\overset{H^+}{\rightleftharpoons}} Cr_2O_7^{2-}$$

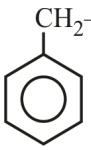
**16. Ans ( 4 )**

NCERT-XII, Part-II ; Page-321, 322

**17. Ans ( 1 )**

NCERT XII, Pg. # 271, Part - 2

**18. Ans ( 1 )**

Duo to localized lone pair 

is the strongest base

**20. Ans ( 3 )**

Fact

**22. Ans ( 2 )**

Fact

**26. Ans ( 1 )**

Fact

**28. Ans ( 3 )**

Theory based NCERT page no. 349

**31. Ans ( 1 )**

$\because 2\pi r = 2\lambda$

$2\pi r = 2x$

$r = \dfrac{x}{\pi}$

**32. Ans ( 2 )**

$\Delta x \cdot m\Delta V = \dfrac{h}{4\pi}$

$\Rightarrow \Delta V = \dfrac{h}{4\pi m(\Delta x)}$

$= \Delta V = 0.57 \times 10^7\ ms^{-1}$

**33. Ans ( 3 )**

By LCP,

If pressure ↑, Eqm will shift where volume is less

$V_{ice} > V_{water} \Rightarrow$ Forward direction will be forward.

**34. Ans ( 3 )**

$N_2O_4 \rightleftharpoons 2NO_2$

1 0

$1-\alpha$ $2\alpha$

$K_p = \dfrac{(n_{NO_2})^2}{(n_{N_2O_4})} \times \left[\dfrac{P_1}{\Sigma n}\right]^1$

For 33% dissociation:

$K_p = \dfrac{(2\times 33)^2}{67} \times \left[\dfrac{P_1}{133}\right]^1$

For 50% dissociation:

$K_p = \dfrac{(2\times 50)^2}{50} \times \left[\dfrac{P_2}{150}\right]^1$

$\therefore \dfrac{P_1}{P_2} = \dfrac{133\times 67\times (2\times 50)^2}{(2\times 33)^2\times 150\times 50} = \dfrac{8}{3}$

**35. Ans ( 3 )**

$BaF_2 \rightleftharpoons Ba^{+2} + 2F^-$

$K_{sp} = [Ba^{+2}]\ (0.1)^2$

$[Ba^{+2}] = \dfrac{10^{-6}}{(0.1)^2}$

$[Ba^{+2}] = 10^{-4}\ M$

**36. Ans ( 1 )**

$CH_3COOH + NaOH \longrightarrow CH_3COONa + H_2O$

0 millimoles 5 millimoles 0 0

↓ ↓

5 millimoles 0 5 millimoles

so final solution is buffer having (salt) = (acid)

$pH = Pk_a + \log \dfrac{[Salt]}{[Acid]}$

since (Salt) = (Acid)

$\Rightarrow \quad pH = Pk_a = 4.7$

**37. Ans ( 4 )**

$\Delta S = 4 \times \log\left(\dfrac{20}{2}\right) \times 2.3 = 9.2$

**38. Ans ( 1 )**

In adiabatic expansion temperature decrease and isothermal expansion temperature is constant, area under the curve $\propto$ work.

**39. Ans ( 2 )**

$Fe(OH)_3$ is lyophobic sol so can be prepared by special method.

**40. Ans ( 4 )**

$\Delta G_3^0 = \Delta G_2^0 - -\Delta G_1^0$

$E_3^0 = 3E_2^0 - -2E_1^0 = 0.772$

**41. Ans ( 3 )**

$\frac{W_1}{E_1} = \frac{W_2}{E_2} \Rightarrow \frac{W_1}{W_2} = \frac{108}{31.5}$

**42. Ans ( 4 )**

$K = \frac{2.303}{t}\log\left(\frac{(n-1)P^o}{nP^o - P_t}\right)$

**43. Ans ( 3 )**

$K = \frac{2.303}{t}\log\left(\frac{a}{a-x}\right)$

$K = \frac{2.303}{32}\log\left(\frac{100}{1}\right)$

$t = \frac{2.303 \times 16}{2.303}\log\left(\frac{100}{0.1}\right) = 48 \text{ min}$

**44. Ans ( 2 )**

The one which shows negative deviation from raoults law form maximum boiling azeotropes.

**45. Ans ( 3 )**

$P_S = P_A^o X_A + P_B^o (1 - X_A) X_B = 0$

If $X_A = 0$ then $P_S = P_A^o (1 - X_B) + P_B^o X_B$

$P_S = P_B^o$ $P_S = P_A^o$

$P = 254 - 119\, X_A$

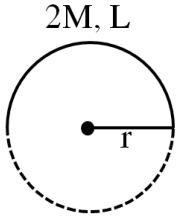
$P = 254 - 119\, X_0$

$P = P_B^o = 254$

$P = 254 - 119 (1 - X_B)$

$P = P_A^o = 254 - 119 = 135$

**46. Ans ( 4 )**




$\pi r = L$

$\therefore r = \frac{L}{\pi}$

$\therefore I = \frac{2ML^2}{\pi^2}$

**47. Ans ( 2 )**

$I_{Remaing} = I_{Large} - I_{small}$

$I_{Remaing} = \frac{(9m)R^2}{2} - \left\{\frac{m'}{2}\left(\frac{R}{3}\right)^2 + m'\left(\frac{2R}{3}\right)^2\right\}$

$\therefore m' = m$

$\therefore I_{Remaining} = 4mR^2$

**48. Ans ( 2 )**

G = galvanometer resistance

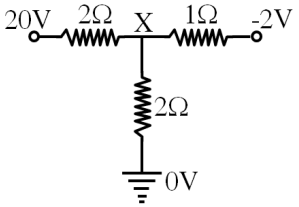
$= \frac{\text{current sensitivity}}{\text{voltage sensitivity}} = \frac{5}{1} = 5\Omega$

Full scale deflection current $i_g = 100 \times \frac{1\text{mA}}{5} = 20\text{mA}$

To convert in to voltmeter of range $1\text{V} \times 100 = 100$ V

$R = \frac{V}{I_g} - G \Rightarrow R = \frac{100}{20 \times 10^{-3}} - 5 = 4995\Omega$ .

**49. Ans ( 4 )**




Using KCL of junction X :-

$\frac{X-20}{2} + \frac{X-0}{2} + \frac{X+2}{1} = 0$

$X - 20 + X + 2X + 4 = 0$

$4X = 16 \Rightarrow X = 4V$

$I_{1\Omega} = \frac{4-(-2)}{1} = 6A$ .

**50. Ans ( 3 )**

$P = \frac{V_1^2}{R_1} = \frac{V_2^2}{R_1} \Rightarrow \frac{R_1}{R_2} = \left(\frac{V_1}{V_2}\right)^2 = \left(\frac{220}{110}\right)^2 = \frac{4}{1}$

**51. Ans ( 2 )**

$O = \frac{6k}{1} + \frac{3kQ}{1} + \frac{2kQ}{2}$

$Q = -\frac{3}{2}C$

**52. Ans ( 1 )**

$q = Ze$

$= 79 \times 1.6 \times 10^{-19}$ C

$V = \frac{kq}{r}$

$= \frac{9 \times 10^9 \times 1.26 \times 10^{-17}}{6.6 \times 10^{-15}} = 1.72 \times 10^7$ V

**53. Ans ( 1 )**

Interference and diffraction can be observed for both transverse and longitudinal waves, however polarization can occur only in transverse waves.

**54. Ans ( 4 )**

$\beta = \frac{\lambda D}{d}$

$= \frac{2 \times 10^{-6} \times 0.9}{0.3 \times 10^{-3}} = 6 \times 10^{-3}$ m

$\beta = 6$ mm

**55. Ans ( 1 )**

capacitance of small drop $C = 4\pi\varepsilon_0 r$

64 such drops combine to form 1 large drop.

$\therefore$ Volume of large drop = 64 × volume of small drop

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

$R = 4r$

$\therefore$ capacitance of big drop

$C_{big} = 4\pi\varepsilon_0 R = 4\pi\varepsilon_0 4r = 4C$

Formula method :

$C = n^{1/3} C_0 = 64^{1/3} C_0 = 4 C_0$

**56. Ans ( 1 )**

$$\text{efficiency} = \frac{P_0}{P_i} \times 100$$

$$60 = \frac{(mgh/time)}{P_i} \times 100$$

$$P_i = \frac{100}{60}\frac{mgh}{3600} = \frac{5}{3} \times \frac{36000 \times 10 \times 90}{3600} = 15 \text{ KW}$$

**57. Ans ( 2 )**

$$\frac{2T}{r} = h\rho g$$

$$r = \frac{2T}{\rho gh} = \frac{2 \times 0.07}{10^3 \times 10 \times 0.4} = 0.035 \text{ mm}$$

$D = 2r = 0.07$ mm

**58. Ans ( 3 )**

$$\rho = \frac{m}{v} = \frac{4.237g}{2.5cm^3} = 1.6948 \text{ g/cm}^3$$

rounding off the number = 1.7 g/cm$^3$

**59. Ans ( 4 )**

$H_n = e^{2n} H_0$

$$= e^4 n_0 = \left(\frac{1}{2}\right)^4 \times 20 = \frac{20}{16} = \frac{5}{4} = 1.25\text{m}$$

**60. Ans ( 4 )**

Output of OR gate is 0 when all inputs are 0 & output is 1 when atleast one of the input is 1.

Observing output x :- It is 0 when all inputs are 0 & it is 1 when atleast one of the inputs is 1.

$\therefore$ OR gate

**61. Ans ( 4 )**

$F_T - mg = ma$

$$\frac{vdm}{dt} - mg = ma$$

$$\frac{dm}{dt}\frac{m(g+a)}{v} = \frac{2000(10+10)}{500} = 80 \text{kgs}^{-1}$$

**62. Ans ( 3 )**

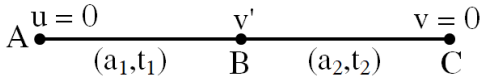
$v = v_0 + mx$

$$\frac{dv}{dx} = m$$

$$\text{acceleration} = v\frac{dv}{dx} = (v_0 + mx)\,m$$

(straight lines)
(with +ve slope & +ve intercept).

**63. Ans ( 4 )**




$A \longrightarrow B$

$v' = a_1 t_1$ ....(1)

$B \longrightarrow C$

$v' = a_2 t_2$ ....(2)

Solve (1) & (2) $\frac{t_1}{t_2} = \frac{a_2}{a_1} = \frac{6}{4} = \frac{3}{2}$

**64. Ans ( 2 )**

Newton's law of cooling :

$$\frac{\Delta T}{\text{time}} = K\left(\frac{\theta_1 + \theta_2}{2} - \theta_0\right)$$

$$\frac{61-59}{4} = K\left[\frac{61+59}{2} - 30\right] \quad ...(1)$$

$$\frac{51-49}{t} = K\left[\frac{51+49}{2} - 30\right] \quad ...(2)$$

On dividing, (1) & (2) $\Rightarrow \frac{t}{4} = \frac{30}{20} \Rightarrow t = 6$ min.

**65. Ans ( 2 )**

$$\text{Breaking stress} = \frac{F}{A}$$

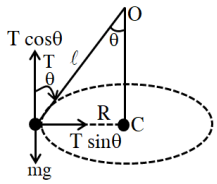
$$\frac{1.5 \times 10^5}{\pi\left(\frac{3}{2}\right)^2} = \frac{F}{\pi\left(\frac{1.5}{2}\right)^2}$$

$$F = \frac{1.5 \times 10^5}{4} = 0.375 \times 10^5 \text{ N}$$

**66. Ans ( 3 )**

$T\sin\theta = \frac{mv^2}{R}$ .....(1)

$T\cos\theta = mg$ ....(2)




Divide equation (1) by equation (2) : $\tan\theta = \frac{v^2}{Rg}$

$\therefore v = \sqrt{Rg\tan\theta}$

$\because \tan\theta = \frac{1}{\cot\theta}$

$\therefore v = \sqrt{\frac{Rg}{\cot\theta}}$

**67. Ans ( 2 )**

$B_0 = \frac{E_0}{C}$

$= \frac{100}{3 \times 10^8} = 0.33 \times 10^{-6}$ T

**68. Ans ( 1 )**

$E_{avg} = -L\frac{\Delta i}{\Delta t}$

$E_{avg} = -(5 \times 10^{-3})\left(\frac{10-20}{0.1}\right)$

$E_{avg} = 0.5$ V

**69. Ans ( 2 )**

If current leads voltage and angle between their phasors $< \frac{\pi}{2}$, it indicates that elements in circuit must contain R and C. It may contain L also, but then $X_C > X_L$. From given options, L is not there, so elements are R & C

**70. Ans ( 2 )**

$\frac{1}{\lambda} = \frac{1}{912\text{Å}}\left(\frac{1}{1^2} - \frac{1}{(3)^2}\right)$

$\frac{1}{\lambda} = \left(\frac{8}{9}\right)\left(\frac{1}{912\text{Å}}\right)$

$\lambda = \frac{9 \times 912}{8}$ Å = 1026Å

**71. Ans ( 2 )**

Neutral point will be near to the small current carrying wire and in outside at which

$\frac{\mu_0 9}{2\pi x} = \frac{\mu_0 \times 16}{2\pi(7+x)} \Rightarrow x = 9$ cm

$\therefore$ From wire of 16A current d = 7 + 9 = 16 cm

**72. Ans ( 2 )**

$B = \mu_0 nI$

$\Rightarrow \frac{B_1}{B_2} = \frac{n_i i_i}{n_2 i_2} \Rightarrow \frac{6.28 \times 10^{-2}}{B_2} = \frac{200 \times \hat{i}}{100 \times i} \times 2$

$B_2 = \frac{6.28 \times 10^{-2}}{4} = 1.57 \times 10^{-2}$ Wb/m$^2$

**73. Ans ( 1 )**

$M = N\,i\,A$

$= 2 \times 0.5 \times \pi r^2$

$6.28 = (2\pi\, r) \times 2$

$r = \frac{6.28}{4\pi} = \frac{1}{2}$

$M = 1 \times \pi \times \frac{1}{4} = \frac{\pi}{4}$ Am$^2$

**74. Ans ( 2 )**

$\frac{\frac{1}{\rho}}{T} =$ constant

$\frac{1}{\rho T} =$ constant

$\rho T =$ constant

$\rho T \propto P =$ constant

isobaric

$\frac{P}{\rho} = \frac{RT}{M}$

$\rho T = \frac{\rho T}{R}$

**75. Ans ( 1 )**

$\Delta W = nR\Delta T = 3 \times \frac{25}{3} \times 100 = 2500$ J

$\Delta U = nC_v\Delta T = 3 \times \frac{5R}{2} \times 100 = 6250$ J

$Q = \Delta U + W = 8750$ J

$\frac{\Delta U}{\Delta W} = \frac{6250}{2500} = 2.5$

**76. Ans ( 2 )**

They are in same phase after n oscillation by large length pendulum and (n + 1) oscillation by small length pendulum.

$\therefore (n+1)\sqrt{\ell_s} = n\sqrt{\ell_e}$

$\Rightarrow (n+1)\sqrt{1} = n\sqrt{25}$

$\Rightarrow n + 1 = 5n \Rightarrow 1 = 4n$

$n = \frac{1}{4}$

$\therefore$ for smaller pendulum $\Rightarrow n + 1 = 1 + \frac{1}{4} = \frac{5}{4}$

**77. Ans ( 2 )**

$v = \sqrt{\frac{T}{\mu}}$

$v = \frac{w}{K}30$m/s

$30 = \sqrt{\frac{T}{0.16}}$

$30 = \sqrt{\frac{T \times 100}{16}}$

$\therefore$ T = 144 N

**78. Ans ( 4 )**

Let $R_1 = R$, then $R_2 = 2R$

$\frac{1}{f} = (\mu - 1)\left(\frac{1}{R_1} - \frac{1}{R_2}\right)$

$\frac{1}{6} = (1.5 - 1)\left(\frac{1}{R} - \frac{1}{-2R}\right)$

$R = R_1 = 4.5$ cm

$R_2 = 9$ cm

**79. Ans ( 4 )**

$${}^{2}\mu_1 \times {}^{3}\mu_2 \times {}^{4}\mu_3 = \frac{\mu_1}{\mu_2} \times \frac{\mu_2}{\mu_3} \times \frac{\mu_3}{\mu_4} = \frac{\mu_1}{\mu_4} = {}^{4}\mu_1$$

**80. Ans ( 4 )**

$$\text{Value of } g = g_s\left(1 + \frac{h}{R}\right)^{-2}$$

$$= g_s(1+2)^{-2} = \frac{g_s}{9}$$

Here $g_s$ = gravitational acceleration at surface

$$\text{Force} = mg = 90 \times \frac{g_s}{9} = 100 \text{ N}$$

**82. Ans ( 3 )**

Since only 6 different wavelength are excited, therefore highest excited state is n = 4.

Two wavelengths are shorter than $\lambda_0$, initially atoms were in excited state n = 2

Corresponding transitions are $4 \longrightarrow 3$, $4 \longrightarrow 2$, $4 \longrightarrow 1$, $3 \longrightarrow 2$, $3 \longrightarrow 1$, $2 \longrightarrow 1$.

**83. Ans ( 2 )**

B.E of Helium = $(2m_P + 2m_N - m_{He})c^2 = 28.4$ MeV

**84. Ans ( 2 )**

$$\lambda = \frac{h}{mv}$$

$$\lambda_P = \lambda_a$$

$$m_P v_P = m_\alpha v_\alpha$$

$$m_P v_P = 4m_p v_\alpha \qquad (m_\alpha = 4m_P)$$

$$\frac{v_P}{v_\alpha} = 4 \qquad \text{(Option 2) is correct}$$

**85. Ans ( 4 )**

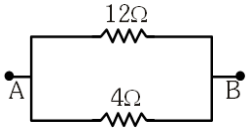
Measured value = 10 mm + 4(0.1 mm)

= 10.4 mm

= 1.04 cm

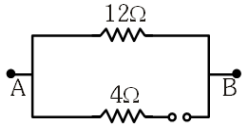
**86. Ans ( 3 )**

(i) $V_A > V_B \Rightarrow$ diode is in FB

$\Rightarrow$ 

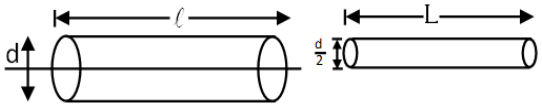

$\Rightarrow R_{AB} = 3\Omega$

(ii) $V_A < V_B \Rightarrow$ diode is in RB

$\Rightarrow$ 


$\Rightarrow R_{AB} = 12\Omega$

**87. Ans ( 4 )**




Initial volume = final volume

$$\frac{\pi d^2 \ell}{4} = \frac{\pi d^2 L}{16} \quad \boxed{L = 4\ell} \quad A_f = \frac{A_i}{4}$$

$$R_i = \frac{\rho \ell}{A_i} \quad R_f = \rho\left(\frac{4\ell}{A_i}\right) = 16\, R_i$$

**88. Ans ( 4 )**

$$f = \frac{1}{0.2}\text{cm}$$

$$P = \frac{100}{f} = 100 \times 0.2 = 20\,\text{D}$$

**89. Ans ( 1 )**

$$x_{cm} = \frac{A_1x_1 - A_2x_2}{A_1 - A_2}$$

$$A_1 = \pi(3R)^2 = 9\pi R^2$$

$$A_2 = \pi R^2$$

$$x_1 = 0,\ x_2 = 2R$$

$$x_{cm} = \frac{0 - \pi R^2 \times 2R}{9\pi R^2 - \pi R^2}$$

$$x_{cm} = -\frac{R}{4}$$

**90. Ans ( 2 )**

The output $(Y) = \overline{\bar{A} \cdot \bar{B}} = A + B$

**91. Ans ( 3 )**

NCERT-XI, Pg. # 32

**92. Ans ( 3 )**

NCERT Pg. No. # 27 & Module

**93. Ans ( 3 )**

XI NCERT Pg. No. # 11

**94. Ans ( 3 )**

NCERT Pg. No. 68

**95. Ans ( 4 )**

NCERT, Pg # 67

Both (1) & (2)

**96. Ans ( 1 )**

NCERT-XI, Pg # 146

**97. Ans ( 1 )**

NCERT, Pg. # 141

**98.** **Ans ( 1 )**
NCERT-XI, Pg # 144

**99.** **Ans ( 3 )**
NCERT XI, Pg. # 150

**100.** **Ans ( 2 )**
NCERT-XI, Page No. # 144,146

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

**102.** **Ans ( 3 )**
NCERT-XI, Pg # 139

**103.** **Ans ( 4 )**
NCERT-XI, Pg. 65

**105.** **Ans ( 1 )**
NCERT-XI, Pg. No. # 14

**106.** **Ans ( 2 )**
NCERT-XII Pg. 12,13,14

**107.** **Ans ( 2 )**
NCERT XII Page No. 7

**108.** **Ans ( 3 )**
NCERT (XII) Pg # 9,10

**109.** **Ans ( 1 )**
NCERT XII Pg. # 6

**110.** **Ans ( 3 )**
NCERT XII Pg. # 12,18

**111.** **Ans ( 2 )**
NCERT-XII, Pg. # 67

**112.** **Ans ( 2 )**
NCERT XII Pg. # 60,61,69

**113.** **Ans ( 1 )**
XII NCERT Pg # 59

**114.** **Ans ( 1 )**
NCERT-XII Pg. # 67, 70

**115.** **Ans ( 2 )**
NCERT-XII, Pg. # 59

**116.** **Ans ( 4 )**
NCERT-XII, Pg. # 63

**117.** **Ans ( 2 )**
NCERT XII Page No. # 70

**118.** **Ans ( 4 )**
NCERT-XII, Pg. # 61, 62

**119.** **Ans ( 2 )**
NCERT-XII, Pg # 95

**120.** **Ans ( 1 )**
NCERT-XII Pg # 86

**121.** **Ans ( 3 )**
NCERT-XII, Page No. # 88,89

**122.** **Ans ( 3 )**
NCERT-XII, Page No. # 91

**123.** **Ans ( 3 )**
NCERT-XII, Page No. # 83,85

**124.** **Ans ( 3 )**
NCERT-XII, Page No. # 94,95

**125.** **Ans ( 3 )**
NCERT-XII, Page No. # 91,93,95

**126.** **Ans ( 3 )**
NCERT-XII, Pg. # 103,105

**127.** **Ans ( 2 )**
NCERT XII Pg No. # 212

**128.** **Ans ( 4 )**
NCERT-XII, Pg. No. # 207

**129.** **Ans ( 3 )**
NCERT XII Pg # 207

**130.** **Ans ( 4 )**
NCERT XII Pg. # 197

**131.** **Ans ( 1 )**
Module

**132.** **Ans ( 4 )**
NCERT-XII Pg. # 201, 202

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

**134.** **Ans ( 4 )**
NCERT XII, Page No. 193

**135. Ans ( 3 )**
NCERT XII, Pg. 222, 225

**137. Ans ( 3 )**
NCERT Pg, 160

**139. Ans ( 4 )**
NCERT Page No. 123

**140. Ans ( 2 )**
NCERT XII Pg # 117

**141. Ans ( 2 )**
NCERT Pg. # 48

**142. Ans ( 2 )**
NCERT, Pg # 44

**143. Ans ( 2 )**
NCERT Pg. # 46

**144. Ans ( 4 )**
Module-6 Page No.#19

**145. Ans ( 2 )**
NCERT Pg. # 334

**147. Ans ( 4 )**
NCERT Pg. No. # 101

**148. Ans ( 3 )**
NCERT Pg. # 48

**149. Ans ( 3 )**
NCERT Pg. # 193

**150. Ans ( 2 )**
NCERT Pg. # 199

**151. Ans ( 3 )**
NCERT Pg # 35-36

**152. Ans ( 2 )**
NCERT, Pg. # 27

**153. Ans ( 4 )**
NCERT Pg. # (E)-37, (H)-41

**154. Ans ( 2 )**
NCERT, Pg. # 35

**155. Ans ( 1 )**
NCERT-XI Pg. # 317

**156. Ans ( 3 )**
NCERT Pg#236

**157. Ans ( 3 )**
NCERT-XI Pg#304, $I^{st}$ para

**158. Ans ( 4 )**
NCERT, Pg. # 310

**163. Ans ( 1 )**
NCERT XII Pg # 199

**164. Ans ( 3 )**
NCERT-XII, Pg. # 196

**165. Ans ( 1 )**
NCERT-XII, Pg. # 184,185

**167. Ans ( 2 )**
NCERT ($XI^{th}$) Pg. # 168 : 10.4.1

**168. Ans ( 4 )**
NCERT-XI, Pg # 137 and 138

**169. Ans ( 4 )**
NCERT-XI, Pg # 143

**173. Ans ( 3 )**
NCERT Pg. # 114

**175. Ans ( 1 )**
NCERT Pg. # 243

**176. Ans ( 2 )**
NCERT Pg. # 244

**177. Ans ( 3 )**
NCERT, Pg. # 43

**180. Ans ( 1 )**
NCERT Pg. # 208