

FT - 16 (FR) (NEET - CBSE, GSEB) (13 - 04 - 2026)

ANSWER KEY

Q	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	
Ans	4	1	2	3	2	2	2	4	3	3	2	2	4	2	1	3	3	4	4	1	
Q	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	
Ans	1	2	1	3	2	2	2	2	2	3	1	2	2	1	1	1	4	3	3	2	
Q	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	
Ans	1	4	3	3	1	1	1	2	4	3	3	2	4	4	2	1	3	4	4	1	
Q	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	
Ans	1	4	2	4	4	3	3	4	4	3	1	2	3	1	1	1	2	1	4	1	3
Q	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100	
Ans	3	3	2	3	2	2	4	4	1	3	1	2	3	4	2	1	4	2	4	3	
Q	101	102	103	104	105	106	107	108	109	110	111	112	113	114	115	116	117	118	119	120	
Ans	4	1	3	3	3	3	3	1	4	3	4	2	2	3	4	4	1	3	3	4	
Q	121	122	123	124	125	126	127	128	129	130	131	132	133	134	135	136	137	138	139	140	
Ans	3	1	4	3	3	3	1	2	1	1	3	3	2	3	3	2	4	4	4	2	
Q	141	142	143	144	145	146	147	148	149	150	151	152	153	154	155	156	157	158	159	160	
Ans	4	3	2	3	1	2	4	4	2	3	1	4	2	3	1	3	3	4	2	2	
Q	161	162	163	164	165	166	167	168	169	170	171	172	173	174	175	176	177	178	179	180	
Ans	2	4	3	1	3	3	2	4	3	4	1	1	3	1	4	3	1	1	4	1	

PHYSICS:

1. Sol. (4)

2. Sol. (1)

System is in rotational equilibrium

$$\therefore |\vec{\tau}_{\text{net}}| = 0$$

$$\therefore F_1 r_1 - F_2 r_2 = 0$$

$$\therefore F_1 r_1 = F_2 r_2$$

3. Sol. (2)

Magnetic field lines always form close curve.

4. Sol. (3)

$$E_q = \frac{E_1 r_2 + E_2 r_1}{r_1 + r_2} = E_1 \left[\frac{r_2 + \left(\frac{E_2}{E_1}\right) r_1}{r_2 + r_1} \right]$$

$$\text{or } E_2 \left[\frac{r_1 + \left(\frac{E_1}{E_2}\right) r_2}{r_1 + r_2} \right]$$

Hence E_{eq} may be equal to greater or less than E_1 or E_2 depending as above on r_1 and r_2 .

$$\text{And } r_{\text{eq}} = \frac{r_1 r_2}{r_1 + r_2} = r_1 \left(\frac{r_2}{r_1 + r_2} \right)$$

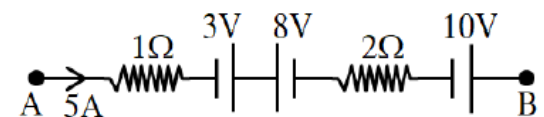
$$\text{or } r_2 \left(\frac{r_1}{r_1 + r_2} \right) < r_1 \text{ and } r_2.$$

5. Sol. (2)

$$S = \frac{G}{\frac{I}{I_g} - 1} \Rightarrow 4 = \frac{36}{\frac{I}{I_g} - 1} \Rightarrow \frac{I}{I_g} = \frac{10}{1}$$

$$\Rightarrow \frac{I_g}{I} = 0.1 \Rightarrow \frac{I_g}{I} \times 100 = 10\%$$

6. Sol. (2)



Using KVL,

$$V_A - 5(1) + 3 - 8 - 5(2) + 10 = V_B$$

$$V_A - 10 = V_B$$

$$V_A - V_B = 10V.$$

7. Sol. (2)

$$R^3 = 8r^3$$

$$R = 2r = 2 \times 10^{-3} \text{ m}$$

$$V = \frac{kq}{R} = \frac{9 \times 10^9 \times 8 \times 10^{-9}}{2 \times 10^{-3}}$$

$$= 3.6 \times 10^4 \text{ V}$$

8. **Sol. (4)**

The total electric charge of a system is the algebraic sum of all the individual charges in the system, also known as law of superposition of electric charge.

9. **Sol. (3)**

$$y = \frac{\Delta x D}{d} \Rightarrow \frac{\beta}{3} = \frac{\Delta x D}{d} \Rightarrow \frac{\lambda D}{3d} = \frac{\Delta x D}{d}$$

$$\Delta x = \frac{\lambda}{3}$$

$$\therefore \Delta \phi = \frac{2\pi}{\lambda} \Delta x$$

$$\Delta \phi = 2\pi/3$$

$$I_R = I_0 \cos^2 \left(\frac{\Delta \phi}{2} \right) = I_0 \cos^2(\pi/3)$$

$$\therefore I_R = \frac{I_0}{4}$$

10. **Sol. (3)**

$$\omega_1 = 2\omega_2$$

$$\frac{\omega_1}{\omega_2} = \frac{2}{1} = \frac{a_1}{a_2} \dots (\omega \propto a) \text{ (Given)}$$

$$\frac{I_{\min}}{I_{\max}} = \frac{(a_{\min})^2}{(a_{\max})^2} = \left(\frac{a_1 - a_2}{a_1 + a_2} \right)^2$$

$$= \left(\frac{2-1}{2+1} \right)^2$$

$$= 1:9$$

11. **Sol. (2)**

$$g' = \frac{g}{\left(1 + \frac{h}{r}\right)^2}$$

$$\frac{9g}{25} = \frac{g}{\left(1 + \frac{h}{r}\right)^2}$$

$$\frac{h}{R} + 1 = \frac{5}{3}$$

$$h = \frac{2R}{3}$$

12. **Sol. (2)**

$$V_0 = \sqrt{\frac{GM}{R}}$$

$$\frac{(V_0)_A}{(V_0)_B} = \sqrt{\frac{R_B}{R_A}}$$

$$\frac{4V}{V_B} = \sqrt{\frac{4R}{16R}} = \frac{1}{2}$$

$$V_B = 8V$$

13. **Sol. (4)**

Energy stored by a capacitor $U = \frac{q^2}{2C}$

$$U_1 = \frac{q_1^2}{2C}, \quad U_2 = \frac{q_2^2}{2C}$$

$$\frac{U_1}{U_2} = \left(\frac{q_1}{q_2} \right)^2 = \left(\frac{q}{q+2} \right)^2$$

$$\text{given } \frac{u_2 - u_1}{u_1} = 0.21$$

On solving $q = 20 \text{ C}$

14. **Sol. (2)**

Work done = Area under (Fx curve)

$$= 10 \times 1 + 20 \times 1 - 20 \times 1 + 10 \times 1$$

$$= 20 \text{ erg}$$

15. **Sol. (1)**

$$x = \frac{mL}{M_{\text{cart}} + m} = \frac{60 \times 3}{120 + 60} = 1 \text{ m left side}$$

16. **Sol. (3)**

In metals and semimetals the fermi level lies inside at least one band i.e., inside conduction band. So (S)-4.

17. **Sol. (3)**

Case-I :

$$V_A < V_B \text{ [} \because (-10\text{V}) < (-5\text{V}) \text{]}$$

D_1 & D_3 are RB and D_2 is FB

$$\therefore R_1 = \frac{R}{4} + R + \frac{R}{4} = \frac{3R}{2}$$

Case-II :

$$V_A > V_B$$

$\Rightarrow D_1$ & D_2 are FB and D_3 is Rb

$$\therefore R_2 = \frac{R}{4} + \frac{\frac{R}{2} \times \frac{R}{2}}{\left(\frac{R}{2} + \frac{R}{2}\right)} + \frac{R}{4} = \frac{3R}{4}$$

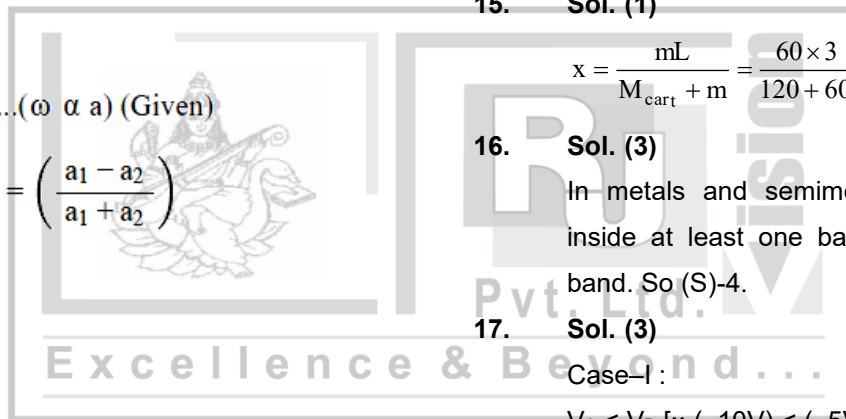
Case-III :

$$V_A > V_B$$

\Rightarrow same as case-II

$$R_3 = \frac{3R}{4}$$

18. **Sol. (4)**



Impulse $I = |\Delta \vec{p}| = (\text{same})$

$$F_{\text{avg}} = \frac{|\Delta \vec{p}|}{\Delta t} \Rightarrow F_{\text{avg}} \propto \frac{1}{\Delta t}$$

$$\therefore \Delta t_A < \Delta t_B$$

$$\therefore F_A > F_B$$

19. Sol. (4)

$$\text{As } T = \frac{2u_y}{g}$$

$$\text{also } T = \text{same} \Rightarrow (u_y)_A = (u_y)_B$$

$$U_A \cos 45^\circ = U_B \cos 30^\circ$$

$$\frac{u_A}{u_B} = \frac{1}{\sqrt{2}}$$

20. Sol. (1)

$$I \propto \omega^2 A^2$$

$$\frac{I_1}{I_2} = \frac{(4)^2}{(8)^2} \times \frac{(2\pi)^2}{(6\pi)^2} = \left(\frac{4}{8}\right)^2 \left(\frac{2\pi}{6\pi}\right)^2$$

$$\frac{I_1}{I_2} = \frac{1}{4} \times \frac{1}{9} = 1:36$$

21. Sol. (1)

For first interval : acceleration is +ve and constant

For second interval : acceleration is -ve and constant.

22. Sol. (2)

$$\frac{F_C}{F'_C} = \frac{mv^2}{r} \times \frac{2r}{mv^2}$$

$$\therefore \frac{F_C}{F'_C} = \frac{2}{1}$$

$$\therefore F'_C = \frac{F_C}{2} \text{ (it becomes halved)}$$

23. Sol. (1)

$$\hat{E} \times \hat{B} = \hat{v}$$

$$+\hat{k} \times \hat{B} = -\hat{j}$$

$$\hat{B} = -\hat{i}$$

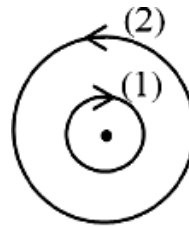
24. Sol. (3)

$$V = \sqrt{V_R^2 + V_L^2}$$

$$\sqrt{(10)^2 + (10)^2}$$

$$= 10\sqrt{2} \text{ volt}$$

25. Sol. (2)



$$B_{\text{net}} = B_1 - B_2$$

$$B_1 = \frac{\mu_0 i N}{2r_1} = \frac{\mu_0 \times 0.2 \times 10}{2 \times 0.2} = \frac{\mu_0 \times 10}{2} \Rightarrow 5\mu_0$$

$$B_2 = \frac{\mu_0 (0.3) \times 10}{2 \times 0.4} = \frac{3\mu_0 \times 10}{8} = \frac{15\mu_0}{4}$$

$$B_{\text{net}} = \frac{5}{4}\mu_0$$

26. Sol. (2)

27. Sol. (2)

Meissner effect

28. Sol. (2)

W_{ABCA} = (Area of ΔABC)

$$= -\frac{1}{2} \times (500 - 100) \times (200 - 100) \times 10^3 \times 10^{-6}$$

$$= -20 \text{ J}$$

29. Sol. (2)

FLOT

$$Q = \Delta U + W$$

$$\Delta U = Q - W$$

$$= 20 \times 4.2 \text{ kJ} - 4 \text{ kJ}$$

$$= 84 - 4$$

$$= 80 \text{ kJ}$$

30. Sol. (3)

$$P \propto T^4$$

$$PT^{-4} = \text{cont.}$$

For adiabatic process

$$PT \frac{\gamma}{1-\gamma} = \text{const.}$$

$$\text{By comparing } \frac{\gamma}{1-\gamma} = -4$$

$$\Rightarrow \therefore \gamma = 4/3$$

31. Sol. (1)

0°C to 4°C density of water increases and maximum at 4°C then decreases due to anomalous behaviour of water.

32. Sol. (2)

$$\frac{\Delta T}{\Delta t} = K \left[\frac{T_1 + T_2}{2} - T_S \right] \text{ Newton's law of cooling}$$

$$\frac{64 - 52}{10} = K \left[\frac{64 + 52}{2} - 16 \right] \dots (i)$$

$$\frac{52-T}{10} = K \left[\frac{52+T}{2} - 16 \right] \dots\dots(ii)$$

on solving (i) & (ii) $T = 43^\circ\text{C}$

33. **Sol. (2)**

$$x = A \sin(\omega t) = A \sin(\theta_1)$$

$$v = \omega A \cos(\omega t) = \omega a \sin \left(\omega t + \frac{\pi}{2} \right) = A \sin(\theta_2)$$

$$a = -\omega^2 A \sin(\omega t) = \omega^2 A \sin(\omega t + \pi) = A \sin(\theta_3)$$

Thus $\theta_3 > \theta_2 > \theta_1$

$$\text{and } \theta_3 - \theta_2 = +\pi/2$$

$$\theta_2 - \theta_1 = +\pi/2$$

34. **Sol. (1)**

$$\lambda = 2(\lambda_2 - \lambda_1)$$

$$\lambda = 2(58 - 18) \text{ cm}$$

$$\lambda = 80 \text{ cm}$$

$$v = \lambda f$$

$$= \frac{80}{100} \times 500 = 400 \text{ m/s}$$

35. **Sol. (1)**

36. **Sol. (1)**

$\theta = \frac{\lambda}{d}$; θ can be increased by increasing λ , so here

λ has to be increased by 10%

$$\text{i.e., \% Increase} = \frac{10}{100} \times 5890 = 589 \text{ \AA}$$

37. **Sol. (4)**

$$P = P_1 + P_2$$

$$= 2 - 1 = +1D$$

$$\therefore f = \frac{100}{P} = \frac{100}{1} = 100 \text{ cm}$$

38. **Sol. (3)**

$$F = [MLT^{-2}]$$

$$a = 1, b = 1, c = -2$$

$$E = [ML^2T^{-2}]$$

$$x = 1, y = 2, z = -2$$

$$ax + by + cz = 1 + 2 + 4 = 7$$

39. **Sol. (3)**

The least count of given Vernier Calipers is

$$LC = MSD - VSD = 1 - (9/10) = 0.1 \text{ mm}$$

$$\text{Zero Error} = CVSD \times LC$$

$$= 3 \times 0.1 = 0.3 \text{ mm}$$

40. **Sol. (2)**

$$R = 4H \text{ (Given)}$$

$$\Rightarrow \tan \theta = 1 \Rightarrow \theta = 45^\circ$$

41. **Sol. (1)**

In metre bridge length of wire should be constant

So, low temperature coefficient is required.

$$\text{Also, } R = \frac{\rho \ell}{A}$$

$$\therefore R \propto \rho$$

For Higher value of resistance, for a small displacement along wire, we are getting more deflection.

\therefore For high resistivity, our device is much more sensible.

42. **Sol. (4)**

Value of reaction

$$12 \times 7.68 - 13 \times 7.48 = 92.16 - 97.24 = -5.08$$

\therefore Required energy = 5 MeV

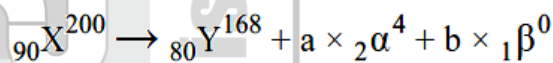
43. **Sol. (3)**

de-Broglie wavelength of gas molecules

$$\lambda = \frac{h}{\sqrt{2mE}} = \frac{h}{\sqrt{3mkT}}$$

$$\Rightarrow \frac{\lambda_H}{\lambda_{He}} = \sqrt{\frac{m_{He} T_{He}}{m_H T_H}} = \sqrt{\frac{4(273+127)}{2(273+27)}} = \sqrt{\frac{8}{3}}$$

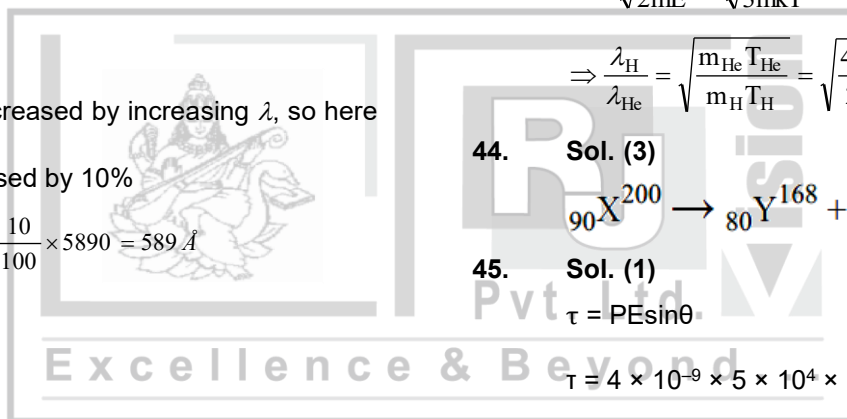
44. **Sol. (3)**



45. **Sol. (1)**

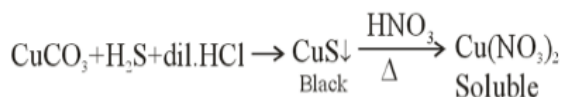
$$\tau = PE \sin \theta$$

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



CHEMISTRY:

46. Sol.(1)
 47. Sol.(1)
 48. Sol.(2)
 49. Sol.(4)
 50. Sol.(3)
 51. Sol.(3)



52. Sol.(2)
 53. Sol.(4)

$$\text{Volatility} \propto \frac{1}{\text{H-bonding}}$$

54. Sol.(4)
 55. Sol.(2)

$$\text{B.P.} \propto \frac{1}{\text{Surface area}}$$

56. Sol.(1)

Statement II is the answer of 1st statement.

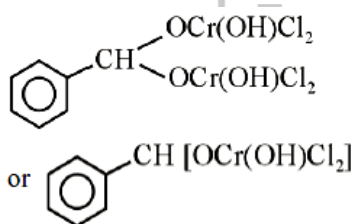
57. Sol.(3)
 58. Sol.(4)

Deficiency of vitamin B causes Beri beri

59. Sol.(4)

Fact

60. Sol.(1)



is the intermediate of Etard reaction.

61. Sol.(4)
 62. Sol.(2)

Compound does not have α -Hydrogen attached with sp carbon.

63. Sol.(4)

Resonance effect dominates over hyperconjugation.

64. Sol.(4)

65. Sol.(3)

20 ml dil. residual H_2SO_4 requires $\equiv 32$ ml of $\frac{N}{10}$

NaOH

$$\therefore 500 \text{ ml dil. residual } \text{H}_2\text{SO}_4 \text{ requires } \equiv \frac{32}{20} \times \frac{500}{100}$$

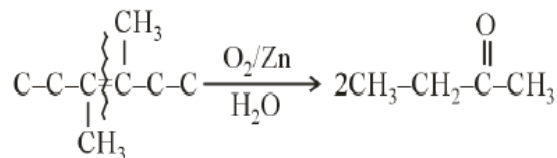
$$= 80 \text{ ml } 1 \text{ N NaOH}$$

$$\text{Acid react with } \text{NH}_3 = [(100 \times 1) - (80 \times 1)]$$

$$= 20 \text{ ml } 1 \text{ N } \text{H}_2\text{SO}_4$$

$$\% \text{ N} = \frac{1.4 \times 20}{1.216} = 23.02\%$$

66. Sol.(3)



67. Sol.(4)

The path of an electron in an atom can never be determined accurately.

68. Sol.(4)

(A) \rightarrow (II), (B) \rightarrow (I), C \rightarrow (III), (D) \rightarrow (IV)

69. Sol.(3)

$$\alpha = \frac{12.8}{(42 + 288.42)} \times 100 = 3.87\%$$

70. Sol.(1)

$$[\text{OH}^-] < 10^{-8}$$

$$\text{pOH} > 8$$

$$\text{pH} < 6$$

71. Sol.(2)

72. Sol.(3)

73. Sol.(1)

For kinetic study of reaction of I^- with H_2O_2 at room temperature

Use freshly prepared are solution of KI and H_2O_2

Record time immediately after appearance of blue colour.

74. Sol.(1)

$$\text{K}_2\text{MnO}_4 \quad 2 + x - 8 = 0 \quad , x = +6$$

$$\text{CaO}_2 \quad 2 + 2x = 0 \quad , x = -1$$

$$\text{H}_2\text{S}_2\text{O}_7 \quad 2 + 2x - 14 = 0 \quad , x = +6$$

$$\text{Fe}_3\text{O}_4 \quad -2, \text{Cr}_2\text{O}_7^{2-} \quad , x = +6$$

$$\text{NO}_3^- \quad x - 6 = -1 \quad , x = +5$$

75. Sol.(1)

$$\Delta G = \Delta H - T\Delta S$$

$$\Delta H = \Delta G + T\Delta S$$

$$= 20000 + 200 \times (-20)$$

$$= 16000 \text{ J/mol}$$

Using Kirchoff's equation,

$$\Delta H_2 - \Delta H_1 = \Delta C_p (T_2 - T_1)$$

$$\Delta H_2 = \Delta H_1 + \Delta C_p (T_2 - T_1)$$

$$= 16000 + 20 (400 - 200)$$

$$= 20000 \text{ J/mol}$$

$$= 20 \text{ kJ/mol.}$$

76. **Sol.(2)**

$$q_{\text{sys.}} = -286 \text{ kJ mol}^{-1}$$

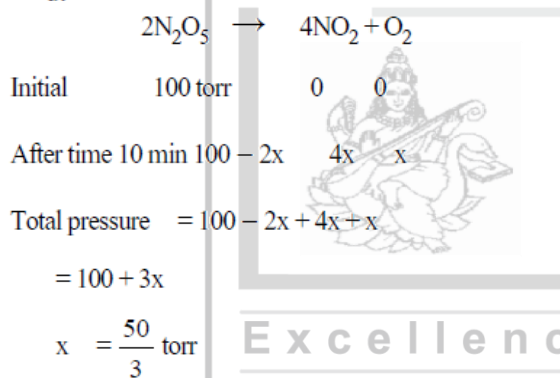
$$q_{\text{surr.}} = -q_{\text{sys.}} = 286 \text{ kJ mol}^{-1}$$

$$\Delta S_{\text{surr.}} = \frac{286}{298} \times 1000 \text{ J K}^{-1} \text{ mol}^{-1}$$

$$= 959.73 \text{ J K}^{-1} \text{ mol}^{-1}$$

77. **Sol.(1)**

$$-\frac{d[\text{N}_2\text{O}_5]}{dt} = \text{Rate of decomposition.}$$



$$\text{So, rate of decomposition} = \frac{2 \times \frac{50}{3}}{10} = \frac{10}{3} \text{ torr min}^{-1}$$

78. **Sol.(4)**

79. **Sol.(1)**

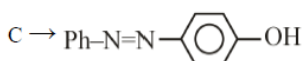
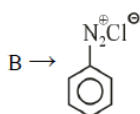
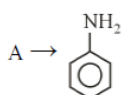
80. **Sol.(3)**

81. **Sol.(3)**

82. **Sol.(3)**

83. **Sol.(2)**

84. **Sol.(3)**



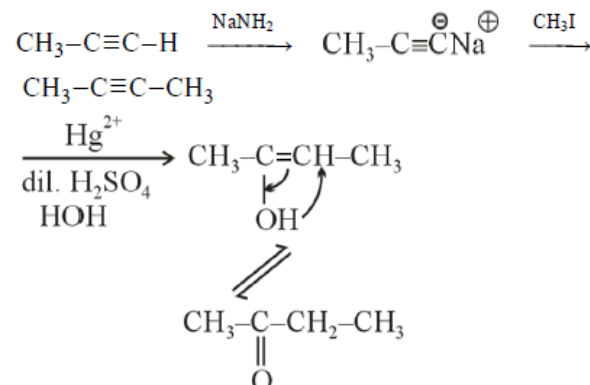
85. **Sol.(2)**

3° – free radical is most stable.

86. **Sol.(2)**

Due to +H effect of – CH₃ group.

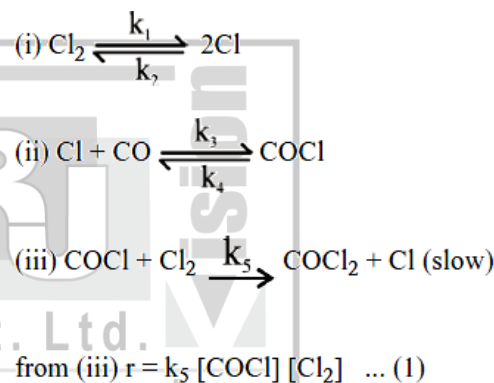
87. **Sol.(4)**



88. **Sol.(4)**

In H-atom energy depends only on value of n. Energy of 5d is greater than 4f.

89. **Sol.(1)**



$$\text{from (ii) } \frac{k_3}{k_4} = \frac{[\text{COCl}]}{[\text{Cl}][\text{CO}]} \dots (2)$$

$$\text{from (iv) } \frac{k_1}{k_2} = \frac{[\text{Cl}]^2}{[\text{Cl}_2]} \dots (3)$$

from eq. (1), (2) & (3) answer (1) is correct

90. **Sol.(3)**

Order of Reducing power : A > C > B > D

Order of oxidising power : A²⁺ < C⁺ < B²⁺ < D³⁺