

FT - 10 (FR) (NEET - CBSE, GSEB) (07 - 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	1	2	1	1	1	2	2	2	4	2	3	4	4	3	1	2	3	2	4	4
Q	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
Ans	1	3	2	4	1	4	Bonus	2	2	2	2	2	1	3	1	1	1	2	1	1
Q	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60
Ans	1	3	4	1	4	3	3	1	1	2	2	2	1	4	4	3	1	4	1	3
Q	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80
Ans	3	2	2	1	3	3	2	3	4	4	3	3	2	4	4	2	1	2	4	2
Q	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
Ans	2	1	4	4	2	4	4	4	3	2	4	1	2	2	4	4	3	3	2	1
Q	101	102	103	104	105	106	107	108	109	110	111	112	113	114	115	116	117	118	119	120
Ans	3	1	4	1	3	2	1	2	4	4	3	1	4	4	3	2	1	3	2	1
Q	121	122	123	124	125	126	127	128	129	130	131	132	133	134	135	136	137	138	139	140
Ans	2	3	2	4	1	2	4	1	2	2	4	4	2	3	2	4	3	2	3	1
Q	141	142	143	144	145	146	147	148	149	150	151	152	153	154	155	156	157	158	159	160
Ans	3	1	1	2	4	3	3	2	4	2	4	4	2	3	2	4	4	3	1	3
Q	161	162	163	164	165	166	167	168	169	170	171	172	173	174	175	176	177	178	179	180
Ans	1	3	1	4	3	2	1	3	4	3	1	4	2	2	1	1	1	1	2	1

PHYSICS:

1. Sol. (1)

2. Sol. (2)

Angular width of central maxima

$$\theta_{\text{central}} = \frac{2\lambda}{d}$$

3. Sol. (1)

$$p = \frac{h}{\lambda} \Rightarrow p \propto \frac{1}{\lambda} \text{ (Rectangular hyperbola)}$$

4. Sol. (1)

Kinetic energy of thermal neutron with equilibrium

$$\text{is } \frac{3}{2} KT.$$

$$\lambda = \frac{h}{mv} = \frac{h}{\sqrt{2m K.E}} = \frac{h}{\sqrt{2m \left(\frac{3}{2}KT\right)}}$$

$$= \frac{h}{\sqrt{3 mKT}}$$

5. Sol. (1)

In semiconductors and insulators, the number of charge carriers per unit volume increases with an increase in temperature, so α is negative for these.

6. Sol. (2)

As $T \uparrow$, collision \uparrow so relaxation time \downarrow so $v_d \downarrow$

7. Sol. (2)

$$\text{Average velocity} = \frac{\text{Total distance}}{\text{Total time}} = \frac{x + 2x}{\frac{x}{v_1} + \frac{2x}{v_2}}$$

$$\Rightarrow v = \frac{3}{\frac{1}{v_1} + \frac{2}{v_2}} \Rightarrow \frac{3}{v} = \frac{1}{v_1} + \frac{2}{v_2}$$

8. Sol. (2)

$$\text{At depth : } g_{\text{eff}} = g \left(1 - \frac{d}{R}\right)$$

$$\Rightarrow \frac{g}{n} = g \left(1 - \frac{d}{R}\right) \Rightarrow d = (n - 1) R/n$$

9. Sol. (4)

$$v_e = \sqrt{\frac{2GM}{R}} = \sqrt{\frac{2G}{R} \times \frac{4}{3}\pi R^3 \rho}$$

$$\text{or } v_e = \sqrt{\frac{8\pi G\rho}{3} R^2}$$

$$\Rightarrow v_e \propto R \Rightarrow \frac{v_e}{v} = \frac{4R}{R} \Rightarrow v_e = 4v$$

10. Sol. (2)

$$2mv\sqrt{2} = mv_1 \Rightarrow v_1 = 2v\sqrt{2}$$

$$\text{K.E} = \left[\frac{1}{2}(2m)v^2 \right] \times 2 + \frac{1}{2} m (2v\sqrt{2})^2$$

$$= 2mv^2 + 4mv^2 = 6mv^2$$

11. Sol. (3)

$$a = \omega^2 r = \left(\frac{2\pi}{T} \right)^2 r = \left(\frac{2\pi}{\pi} \right)^2 10$$

$$= 40 \text{ cm/s}^2$$

12. Sol. (4)

$$W = \int_0^5 F dx = \int_0^5 (7 - 2x + 3x^2) dx$$

$$= [7x - x^2 + x^3]_0^5$$

$$= 35 - 25 + 125 = 135 \text{ J}$$

13. Sol. (4)

To complete a vertical circle, speed at A should

$$\text{be } v_A = \sqrt{5gR}$$

using energy conservation $mgh = \frac{1}{2}mv_A^2$

$$h = \frac{1}{2} \frac{v_A^2}{g} = \frac{1}{2} \frac{5gD}{g} = \frac{5D}{4}$$

$$\left(R = \frac{D}{2} \right)$$

14. Sol. (3)

$$\cos \phi = \frac{R}{Z}$$

$$= \frac{3}{5} = 0.60$$

15. Sol. (1)

At resonance

$$\omega = \frac{1}{\sqrt{LC}}$$

$$\omega^2 = \frac{1}{LC}$$

$$L = \frac{1}{\omega^2 C} = \frac{1}{10^6 \times 100 \times 10^{-6}} = 10 \text{ mH}$$

16. Sol. (2)

$$\tau = MB \sin 30^\circ \dots (1)$$

$$W = MB (1 - \cos 60^\circ) \dots (2)$$

From (1) and (2)

$$\frac{\tau}{W} = \frac{1/2}{1/2} \Rightarrow \tau = W$$

17. Sol. (3)

$$f = \frac{eB}{2\pi m}$$

$$f = \frac{1.76 \times 10^{11} \times 3.57 \times 10^{-2}}{2 \times 3.14} \text{ Hz}$$

$$f = 10^9 \text{ Hz or } 1 \text{ GHz}$$

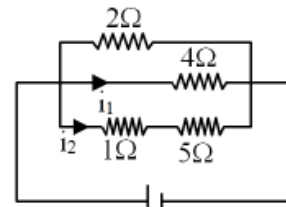
18. Sol. (2)

19. Sol. (4)

$$R' = \frac{\rho \ell'}{A'} = \rho \frac{1.2\ell}{A/1.2} = 1.44 R$$

$\rho \rightarrow$ same

20. Sol. (4)



$$\frac{i_2}{i_1} = \frac{R_1}{R_2}$$

$$\frac{i_2}{3} = \frac{4}{1+5}$$

$$i_2 = 2A$$

$$\text{Power} = P = i_2^2 R$$

$$= 2^2 (5) = 20 \text{ watt}$$

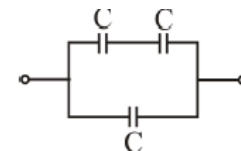
21. Sol. (1)

$$v_{\text{rms}} \propto \sqrt{T}$$

$$\Rightarrow \frac{v}{200} = \sqrt{\frac{600}{400}}$$

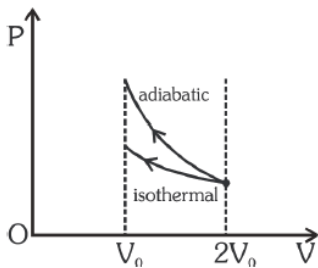
$$\Rightarrow v = 100\sqrt{6}$$

22. Sol. (3)



$$C_{\text{eq}} = \frac{3C}{2} = \frac{3}{2}(6) = 9$$

23. Sol. (2)



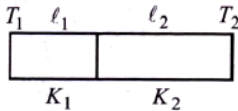
$W(\text{adiabatic}) > W(\text{isothermal})$

24. **Sol. (4)**

Let T be the temperature of the interface.

In the steady state, $Q_1 = Q_2$

$$\therefore \frac{K_1 A (T_1 - T)}{\ell_1} = \frac{K_2 A (T - T_2)}{\ell_2}$$



where A is the area of cross-section.

$$\Rightarrow K_1 A (T_1 - T) \ell_2 = K_2 A (T - T_2) \ell_1$$

$$\Rightarrow K_1 T_1 \ell_2 - K_1 T \ell_2 = K_2 T \ell_1 - K_2 T_2 \ell_1$$

$$\Rightarrow (K_2 \ell_1 + K_1 \ell_2) T = K_1 T_1 \ell_2 + K_2 T_2 \ell_1$$

$$\Rightarrow T = \frac{K_1 T_1 \ell_2 + K_2 T_2 \ell_1}{K_2 \ell_1 + K_1 \ell_2} = \frac{K_1 \ell_2 T_1 + K_2 \ell_1 T_2}{K_1 \ell_2 + K_2 \ell_1}$$

25. **Sol. (1)**

In adiabatic process

$$Q = 0$$

$$Q = W + \Delta U$$

$$W = -\Delta U$$

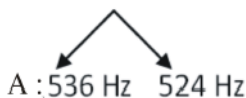
When work done by system then work is positive so ΔU will be negative

So, temperature will decrease

Here work done by the system will be at expense of internal energy

26. **Sol. (4)**

B : 530 Hz



Frequency $\propto \sqrt{\text{Tension}}$

If tension in B is slightly decreased, then frequency of B decreases and beats increases therefore frequency of A will be 536 Hz.

27. **Sol. (Bonus)**

$$v \propto \sqrt{\text{Tension}}$$

$$\frac{v_i}{v_f} = \sqrt{\frac{T_i}{T_f}}$$

$$\frac{v_i}{v_f} = \sqrt{\frac{T}{(T/2)}} = \frac{\sqrt{2}}{1}$$

28. **Sol. (2)**

Energy released in 1kg of deuteron

$$= \frac{6.02 \times 10^{23} \times 1 \times 10^3}{2} \times 1.6 \text{ MeV}$$

$$= \frac{9.6}{2} \times 10^{32} \text{ eV} \approx 5 \times 10^{32} \text{ eV}$$

29. **Sol. (2)**

$$\frac{1}{F_1} = \frac{1}{f} + \frac{1}{f} \Rightarrow F_1 = f/2 \text{ and } \frac{1}{F_2} = \frac{1}{f} - \frac{1}{f} + \frac{1}{f}$$

$$\Rightarrow F_2 = f \Rightarrow \frac{F_1}{F_2} = \frac{1}{2}$$

30. **Sol. (2)**

For max. intensity

$$I_0 = A_1^2 + A_2^2 + 2A_1 A_2 \cos \phi$$

$$I_0 = (2^2 + 3^2 + 2 \times 2 \times 3) A^2 = 25 A^2$$

when path difference is $\frac{\lambda}{2}$ { $\cos \phi = \cos 180^\circ = -1$ }

$$I = [2^2 + 3^2 + 2(2)(3)(-1)] A^2 = A^2$$

$$\therefore I = \frac{I_0}{25}$$

31. **Sol. (2)**

$$\text{Recoil energy} = \frac{p^2}{2M}$$

$$p = \frac{h}{\lambda} = \frac{h\nu}{c} \Rightarrow \text{Recoil energy} = \frac{h^2 \nu^2}{2Mc^2}$$

32. **Sol. (2)**

$$\omega = \sqrt{\frac{g}{\mu_s r}} = \sqrt{\frac{10}{0.3 \times 2}} = \sqrt{\frac{50}{3}}$$

$$= 4.1 \text{ rad/s}$$

33. **Sol. (1)**

$$B = \frac{E}{C}$$

$$\mu_0 H = \frac{E}{C}$$

$$\therefore H = \frac{E}{\mu_0 C} = \frac{(10/\sqrt{2})}{4\pi \times 10^{-7} \times 3 \times 10^8}$$

$$= \frac{1}{12\sqrt{2}\pi} = 18.8 \text{ mili Amp}$$

34. **Sol. (3)**

Ratio of magnetic moment and angular momentum is given by

$$\frac{M}{L} = \frac{q}{2m}$$

which is a function of q and m only. This can be derived as follows :

$$M = iA = (qf) \cdot (\pi r^2) \\ = (q) \left(\frac{\omega}{2\pi} \right) (\pi r^2) = \frac{q\omega r^2}{2}$$

and $L = I\omega = (mr^2\omega)$

$$\therefore \frac{M}{L} = \frac{q \frac{\omega r^2}{2}}{mr^2\omega} = \frac{q}{2m}$$

35. Sol. (1)

$$\text{Work} = MB[\cos \theta_1 - \cos \theta_2]$$

$$\text{Work} = MB[\cos 0 - \cos 90^\circ]$$

$$W = NiAB[1 - (0)] = NiAB$$

$$W = 4 \mu\text{J}$$

36. Sol. (1)

$$V = \frac{kQ}{r} \text{ \& } E = \frac{kQ}{r^2}$$

$$\Rightarrow V = \sqrt{kQE}$$

37. Sol.(1)

$$m = +\frac{1}{n} = -\frac{v}{u} \Rightarrow v = -\frac{u}{n}$$

By using mirror formula $\frac{1}{f} = \frac{1}{u} + \frac{1}{v} \Rightarrow u = -(n-1)f$

38. Sol. (2)

Ga has a valency of 3.

39. Sol. (1)

$$\frac{a_R}{a_r} = \frac{\omega_R^2 \times R}{\omega_r^2 \times r} = \frac{T_r^2}{T_R^2} \times \frac{R}{r} = \frac{R}{r} \quad [\text{As } T_r = T_R]$$

40. Sol. (1)

$$T_1 = m(g+a) = 1 \times \left(g + \frac{g}{2} \right) = \frac{3g}{2}$$

$$T_2 = m(g-a) = 1 \times \left(g - \frac{g}{2} \right) = \frac{g}{2}$$

$$\therefore \frac{T_1}{T_2} = \frac{3}{1}$$

41. Sol. (1)

From FLOT

$$\Rightarrow dU = dQ - dW \Rightarrow dU = dQ (< 0) \quad (\because dW = 0)$$

$\Rightarrow dU < 0$ So temperature will decrease.

42. Sol.(3)

$$W = \frac{1}{2} \frac{Y A l^2}{L} \Rightarrow 0.4 = \frac{1}{2} \times \frac{Y \times 1^{-6} \times (0.2 \times 10^{-2})^2}{1}$$

$$\therefore Y = 2 \times 10^{11} \text{ N/m}^2$$

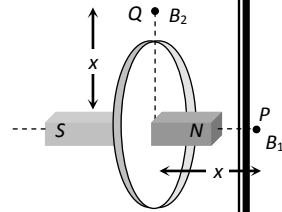
43. Sol. (4)

44. Sol.(1)

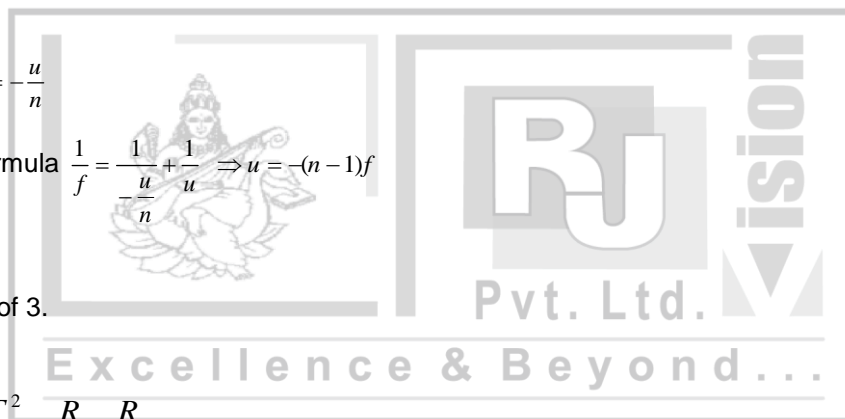
Current carrying coil behaves as a bar magnet as shown in figure.

We also know for a bar magnet, if axial and equatorial distance are same then $B_a = 2B_e$

Hence, in this equation $\frac{B_1}{B_2} = \frac{2}{1}$



45. Sol. (4)



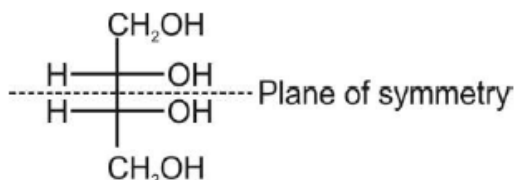
CHEMISTRY:46. **Sol. (3)**

At 373.15 K vapour pressure of pure H₂O = 760 mmHg

$$P_s = P_A^o \times X_A$$

$$= 760 \times \frac{50}{52}$$

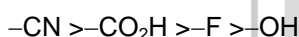
$$= 730.77 \text{ mm Hg}$$

47. **Sol. (3)**

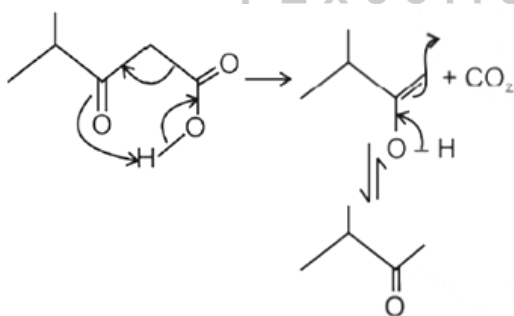
Above molecule contains plane of symmetry hence it is optically inactive compound.

48. **Sol. (1)**49. **Sol. (1)**50. **Sol. (2)**51. **Sol. (2)**52. **Sol. (2)**

Correct order of -I effect of the given groups is

53. **Sol. (1)**

β -ketoacid decarboxylates most easily on heating.

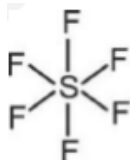
54. **Sol. (4)**

In Zn(II), no. of unpaired electron is zero due to having $3d^{10} 4s^0$ as outer electronic configuration.

$$t = 250 \text{ s}$$

55. **Sol. (4)**

SF₆ has octahedral geometry.



No. of 90° bond angles = 12

56. **Sol. (3)**

H-E-H angle (°)

NH₃ 107.8

PH₃ 93.6

AsH₃ 91.8

SbH₃ 91.3

57. **Sol. (1)**

Proline is a cyclic amino acid.

58. **Sol. (4)**59. **Sol. (1)**

Methanol, CH₃OH, also known as "wood spirit".

60. **Sol. (3)**

The order of reactivity of halides with amines is R-I > R-Br > R-Cl as the order of leaving ability is I⁻ > Br⁻ > Cl⁻.

61. **Sol. (3)**

Rate constant becomes two times nearly with every 10°C rise in the reaction temperature.

62. **Sol. (2)**63. **Sol. (2)**

In ionic compound (NaCl) formula mass is preferred over molecular mass.

64. **Sol. (1)**

The kinetic energy of ejected electrons increases with the increase of frequency of the light used.

65. **Sol. (3)**

Kjeldahl method is not applicable to compounds containing nitrogen in nitro and azo groups.

66. **Sol. (3)**

$$t = \frac{2.303}{k} \log \frac{[A_0]}{[A_t]}$$

$$= \frac{2.303}{4.606 \times 10^{-3}} \log \frac{100}{10}$$

$$= 500 \text{ s}$$

67. **Sol. (2)**

$$B_2(10) = \sigma 1s^2 \sigma^* 1s^2 \sigma 2s^2 \sigma^* 2s^2 \left\{ \begin{array}{l} \pi 2p_x^1 \\ \pi 2p_y^1 \end{array} \right.$$

Since B₂ contains unpaired electrons therefore, paramagnetic in nature

68. **Sol. (3)**69. **Sol. (4)**

• Solubility of $\text{CaSO}_4 = \sqrt{K_{sp}}$

$$= \sqrt{9 \times 10^{-4}}$$

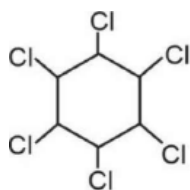
$$= 3 \times 10^{-2} \text{ M}$$

- $3 \times 10^{-2} \text{ M}$ means $3 \times 10^{-2} \text{ mol}$ in 1 L solution
Therefore volume of water required to dissolve 1 mol CaSO_4

$$= \frac{1}{3 \times 10^{-2}} = 33.3 \text{ L}$$

70. Sol. (4)

71. Sol. (3)



(Benzene hexachloride)

It is not an aromatic compound.

72. Sol. (3)

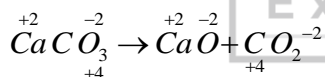
$$E_n = \frac{-1312}{n^2} \text{ kJ mol}^{-1}$$

$$E_1 = \frac{-1312}{1^2} = -1312 \text{ kJ mol}^{-1}$$

$$E_3 = \frac{-1312}{3^2} = -145.78 \approx -146 \text{ kJ mol}^{-1}$$

$$\Delta E = E_3 - E_1 = -146 - (-1312) = 1166 \text{ kJ mol}^{-1}$$

73. Sol. (2)

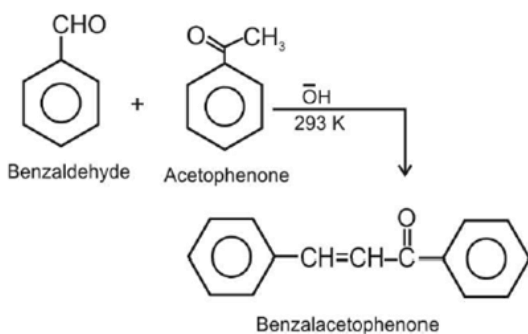


In this reaction oxidation number of each element remain same so it is not a redox reaction.

74. Sol. (4)

In concentration cell, anode and cathode are of same element.

75. Sol. (4)



Acetophenone contains three enolizable hydrogen.

76. Sol. (2)

Diamond \rightarrow Fullerene, $\Delta H_f = ?$

$$\Delta H_f = \Delta H_f (\text{Fullerene}) - \Delta H_f (\text{Diamond})$$

$$= 38.1 - 1.9 = 36.2 \text{ kJ mol}^{-1}$$

77. Sol. (1)

Dihalides in which both halogens are present at same carbon are known as gem dihalides.

78. Sol. (2)

With increase of concentration of common ion, solubility of salt decreases.

79. Sol. (4)

$$E = -13.6 \left[\frac{1}{n_i^2} - \frac{1}{n_f^2} \right] \text{ eV}$$

As the energy level increases, the energy difference decreases progressively and more the energy difference between orbits, greater is the energy emitted/absorbed.

80. Sol. (2)

Phenol is stronger acid than alcohol because of the fact that phenoxide is less basic than $\text{C}_2\text{H}_5\text{O}^-$ due to resonance stabilisation.

81. Sol. (2)

Elements with atomic number	IUPAC official name
102	Nobelium
103	Lawrencium
105	Dubnium
107	Bohrium

82. Sol. (1)

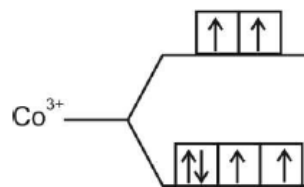
In case of positive deviation from Raoult's law, A-B interactions are weaker than those between A-A or B-B molecules.

83. Sol. (4)

84. Sol. (4)



$\therefore \text{F}^-$ is a weak field ligand, so pairing of unpaired electrons not occur.



\Rightarrow No. of unpaired electrons = 4

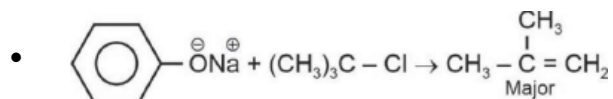
⇒ Magnetic moment

$$= \sqrt{n(n+2)} BM$$

$$= \sqrt{4 \times 6}$$

$$= \sqrt{24} \text{ BM}$$

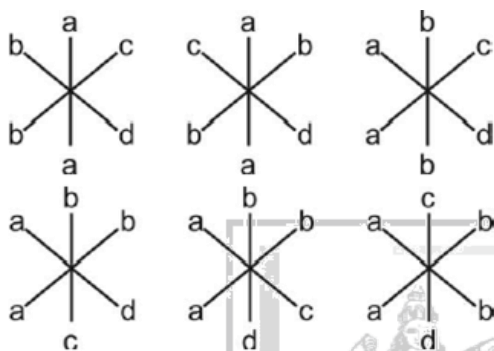
85. Sol. (2)



- Tertiary butoxide ion does not react with chlorobenzene at ordinary condition because of C-Cl double bond character.

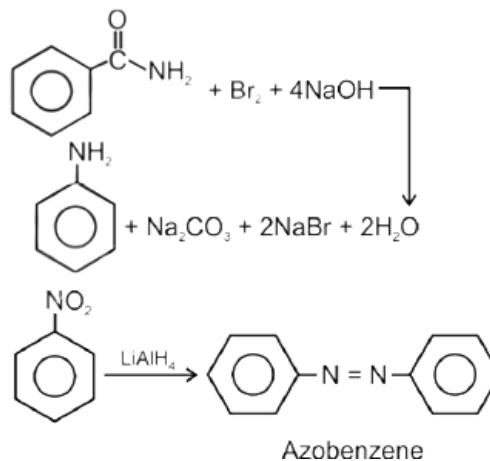
86. Sol. (4)

87. Sol. (4)



88. Sol. (4)

Hoffmann bromamide degradation.



89. Sol. (3)

90. Sol. (2)

