

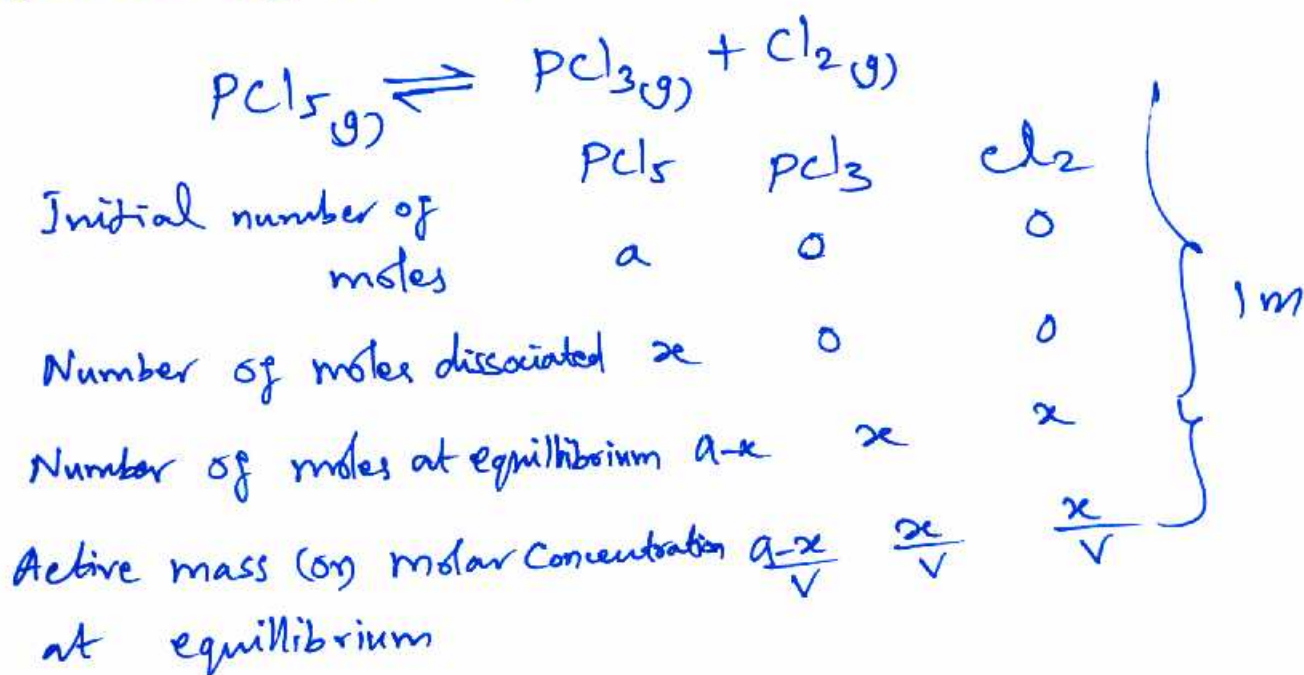
XI - Std - CHEMISTRYAnswer KeyPART - I

1. (a) CH_2O .
2. (a) Principal
3. (b) Ununium.
4. (c) $\text{CO} + \text{H}_2$
5. (a) (p)-(2), (q)-(3), (r)-(4), (s)-(1).
6. (d) Both assertion and reason are false.
7. (d) Isobaric process.
8. (b) 5.
9. (d) $\Delta G_{\text{mix}} = 0$
10. (c) T shaped.
11. (b) $\text{CH}_3\text{-CO-CH}_3$
12. (c) $-\text{C}(\text{CH}_3)_3 > -\text{CH}(\text{CH}_3)_2 > -\text{CH}_2\text{CH}_3 > -\text{CH}_3$.
13. (d) - 2-methyl propane.
14. (b) - freon - 113.
15. (c) - trickling filters.

PART - II

16. Aufbau principle - Correct statement - 2m
17. Ionisation energy increases across a period - 1m
Ionisation energy decreases down a group - 1m
18. Plaster of paris uses - any two uses - 2m

19. First law of thermodynamics any one statement -
20. Derive k_c value for dissociation of PCl_5 2m

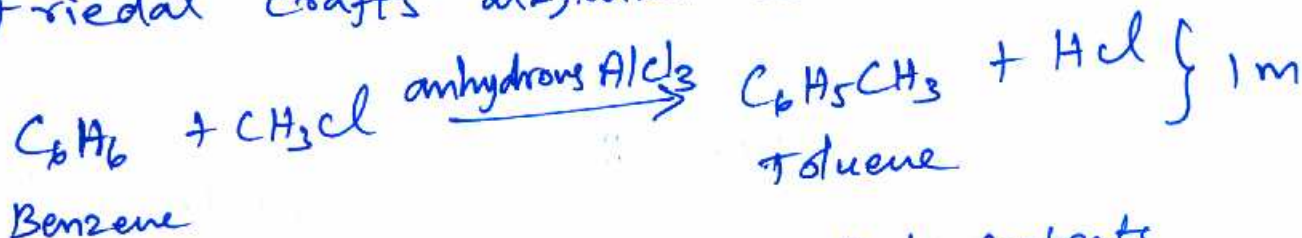


Applying law of mass action,

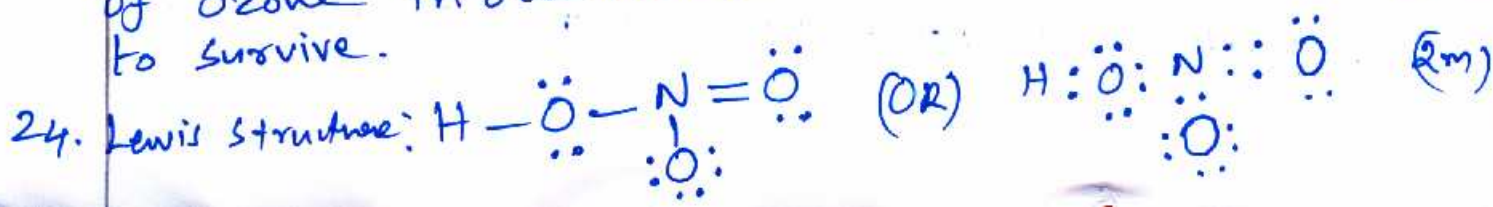
$$k_c = \frac{[PCl_3][Cl_2]}{[PCl_5]} = \frac{\left(\frac{x}{V}\right)\left(\frac{x}{V}\right)}{\frac{a-x}{V}} = \frac{x^2}{(a-x)V}$$
} 1m

21. Homologous series Correct definition - 2m

22. Friedal crafts alkylation reaction - 1m



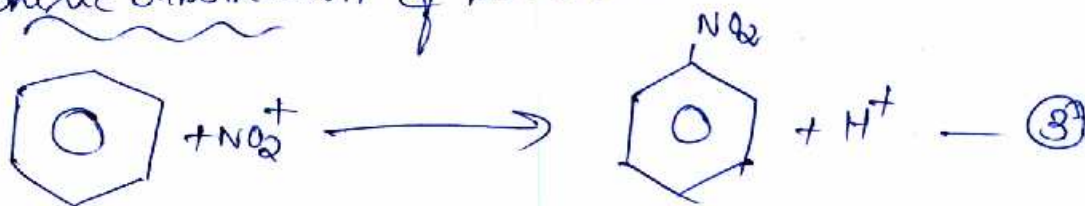
23. Ozone layer in the atmosphere that protects everything living on the earth from harmful ultraviolet (UV) rays from the sun. Without the layer of ozone in the atmosphere, it would be very difficult to survive. (2m)



Part - III

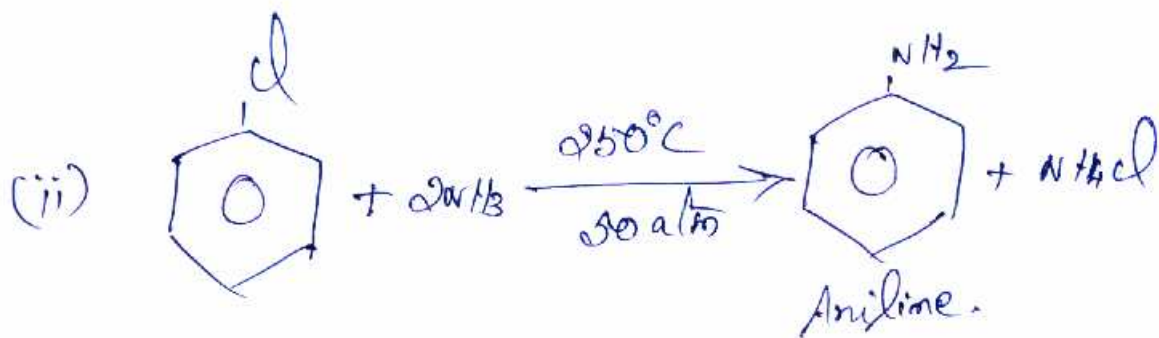
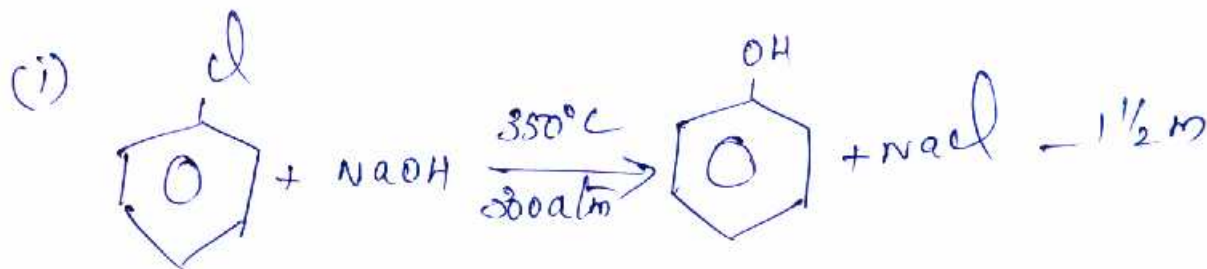
- (25) Diff b/w oxidation and Reduction
3 points - 3m
- (26) postulates of Bohr's atomic model
3 points - 3m
- (27) Characteristics of Internal energy
3 points - 3m
- (28) Henry's law correct statement - 3m
- (29) Correct defn of Bond order - 2m
Expression/formula - 1m
- 30) Functional Isomerism - 1m
eg: C_2H_6O
Alcohol CH_3CH_2OH
Dimethyl ether CH_3-O-CH_3 - 2m

(31) Electrophilic substitution of benzene.



(32)

chloro benzene to



(33) The electronic configuration of K atom

$$K_{19} = \underbrace{1s^2}_{(n-2) \text{ \& others}} \underbrace{2s^2 2p^6}_{(n-1)} 3s^2 3p^6 4s^1$$

Group	no of e ⁻ group	Contribution of each e ⁻ to s value	Contribution of particular group to s value
n	0	0.35	0
(n-1)	8	0.85	6.80
(n-2) & others	10	1	10.00
			<u>16.80</u>

$$Z_{\text{eff}} = Z - S = 19 - 16.80 = 2.20 //$$

Part IV

(34) (a) (i) Correct definition of combination reaction (2) m
 example (1) m

(ii) Modern periodic law (2) m

(b) (i) $E_n = \frac{-13.6}{n^2} \text{ eV}$ (1) m
 Second excited state (1) m
 $n=3 \therefore E_3 = \frac{-13.6}{9} \text{ eV}$ (1) m
 $= -1.51 \text{ eV}$ (1) m

(ii) Mathematical expression of Gibbs free energy

$G = H - TS$ (1) m

H = Enthalpy T = Temperature S = Entropy (1) m

(35) a) (i) Hydrides - Correct defn (2) m

Ionic hydrides (1) m
 Covalent hydrides (1) m
 Metallic hydrides

Examples for each (1) m

(b) (i) Solvay process - 4 equations (3) m

Conditions for spontaneity of a process $\Delta G < 0, \Delta H < 0 \text{ \& } \Delta S > 0$ (2) m

(36) a) (i) Boyle's law $V \propto 1/p$ (1) m
 Charles's law $V \propto T$ (1) m
 Avogadro's law $V \propto n$ (1) m
 $V \propto n/p \text{ \& } V = nRT/p$ (1) m
 $PV = nRT$ (1) m

(i) chemical equilibrium is dynamic correct definition — 2 m



$$K_c = \frac{(\text{HCl})^4 (\text{O}_2)}{(\text{H}_2\text{O})^2 (\text{Cl}_2)^2} \quad \text{--- (1) m}$$

$$K_p = \frac{p^4 \text{HCl} \cdot p \text{O}_2}{p^2 \text{H}_2\text{O} \cdot p^2 \text{Cl}_2} \quad \text{--- (1) m}$$

(ii) Correct definition of solubility — (1) m

Factors influences the solubility

- Nature of solute & solvent
 - Effect of temperature
 - Effect of pressure
- 2 m

37) (i) Characteristics of organic compound — 3 points — 3 m

- (ii)
- CH_3OH — Methanol
 - $\text{C}_2\text{H}_5\text{OH}$ — Ethanol
 - $\text{C}_3\text{H}_7\text{OH}$ — Propanol
 - $\text{C}_4\text{H}_9\text{OH}$ — Butanol
- 2 m

(b) (i) Benzenoid compound — phenol } — 2 m
 Non Benzenoid compound — azulene }

(ii) Correct statement Inductive effect — 2 m

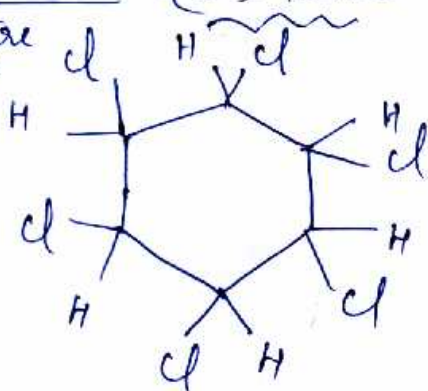
eg: Chloro ethane (or) any one halo alkane } — 1 m

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(a) (i) MO diagram of Nitrogen molecule } — 1 m
 Electronic Configuration }

Diagram — 1 m
 Bond order — 1 m

(ii) Gammoxane (or) BHC
structure



_____ (1m)

Use ∴ powerful Insecticide

_____ (1m)

(b) (i) Carbylamine reaction

(1m)



(ii) Any three harmful effects of acid rain _____ (3m)

Handling Teachers.

- 1) T. S. S. S.
- 2) u.a.o.
- 3) D.T. J. J. J.
- 4) J. J. J.
- 5) N. S. S.
- 6) S. S. S.

20/12/19

