SETHU BHASKARA MAT HR SEC SCHOOL - PUDUR

XII - II - Revision - Chemistry

Answer key

Part - I

15 x 1 = 15

(1) - 4E (b)

(2) Ar F6 (d)

(3) AgBr (a)

(4) Mish-metals (a)

(5) Fe^{2+} (b)

(6) all the above (d)

(7) q = 0 (b)

(8) (c) $k = Ae^{-Ea/RT}$.

(9) (b) Scattering of Light

(10) (a) CH_3COOH.

(11) (b) 2-pentanone.

(12) (b) acetaldehyde.

(13) (d) Calcium oxolate.

(14) (c) $C_6H_5N_2Cl$.

(15) (d) water.

Part - II

(16) Correct Statement of Heisenberg uncertainty Principle. — 2M

(17) (i) Bond energies of many elements are not known — 1M

(ii) electron affinities of many elements are not known — 1M

(18) Correct Statement of Spitting of Silver
- 2M.

(19) Ultra Cold Substance Conduct Current at zero resistance (or) without resistance
- 2M.

(20) (i) $H_{2(g)} + I_{2(g)} \rightleftharpoons 2HI_{(g)}$

$\Delta n_g = 2 - 2$ — 1M.

$= 0$

(ii) $2H_2O_{(g)} + 2Cl_{2(g)} \rightleftharpoons 4HCl_{(g)} + O_{2(g)}$

$\Delta n_g = (4+1) - (2+2)$ — 1M

$= 5 - 4$

$= 1$

(21) Correct Statement of Activation Energy — 2M

(or)

A.E = T.E - Energy of Colliding molecules. — 1M

(22) Two Condition of optically activity.

(i) Assymmatric Carbon — 1M

(ii) Chirality - Non super Imposable mirror Image — 1M

(23) Prep of Urotrophine

(i) $6CH_2O + 4NH_3 \rightarrow (CH_2)_6N_4 + 6H_2O$. — 1M

(ii) Used as urinary antiseptic — 1M

(24) any two uses of ozalic acid. — 2M.

PART – III

25. H_3PO_4 is triprotic – 3 equations (3 marks)

$H_3PO_4 + NaOH \longrightarrow NaH_2PO_4 + H_2O$

Sodium Dihydrogen phosphate

$H_3PO_4 + 2NaOH \longrightarrow Na_2HPO_4 + 2H_2O$

Disodium Hydrogen phosphate

$H_3PO_4 + 3NaOH \longrightarrow Na_3PO_4 + 3H_2O$

Sodium phosphate

26. Chrome plating correct explanation with anode and cathode.

Cathode – Article to be plated with chromium (½ m)

Anode – Lead plate (½ m)

Electrolyte – Chromic acid and Sulphuric acid (½ m)

Explanation – 1½ mark

27. Lanthanide Contraction:

Correct Definition – 2 mark

Causes – 1 mark.

28. Entropy Definition – 2 mark

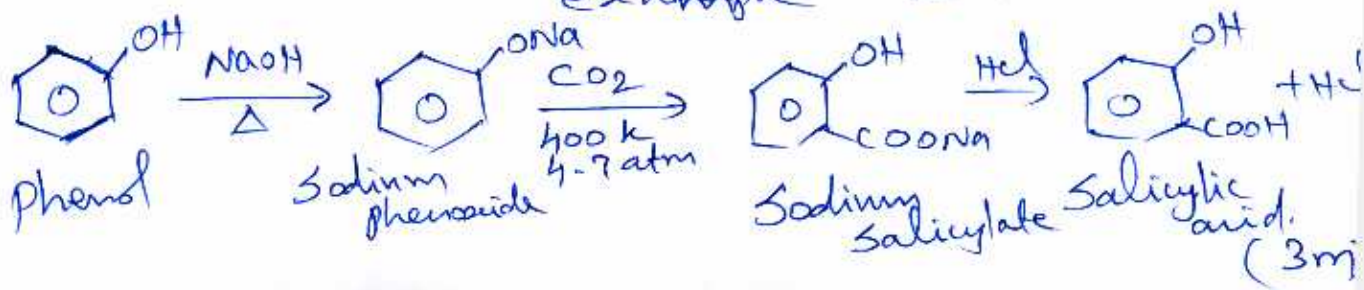
Unit of entropy – 1 mark

29. Tyndall effect Correct explanation – 3 mark.

30. Common ion effect Definition – 2 mark

example – 1 mark.

31.



Phenol — Sodium phenoxide — Sodium Salicylate — Salicylic acid. (3m

32. Statement - 1 mark

equation - 2 mark.

33. Antacid Definition - 2 mark

example - 1 mark

PART - IV

34(a)

NaF crystal - Na^+ - 2,8 } Ne type configuration
F^- - 2,8 } - 1 mark

$r_{(C^+)} + r_{(A^-)} = d_{(C^+ - A^-)}$ — 1 mark.

Expansion - [illegible]

$r_{(C^+)} \propto \frac{1}{Z^*(C^+)}$ - 1 mark

$r_{(A^-)} \propto \frac{1}{Z^*(A^-)}$ - 1 mark.

$\frac{r_{(C^+)}}{r_{(A^-)}} = \frac{Z^*(A^-)}{Z^*(C^+)}$ - 1 mark.

(OR)

(b) Extraction of Zinc:

Chief Ore - ½ mark.

Concentration - ½ mark

Roasting - 1 mark.

Reduction - 1 mark

Purification - 2 mark.

35(a) Extraction of Lanthanides from monazite sand:

Flow chart – 3m

Separation – 2m

(OR)

(b) Various Statement of second law of thermodynamics.

kelvin - planck – 1 mark

clausius – 1 mark

entropy statement - 1 mark

efficiency of machine with explanation } 2 mark

36 (a) Derive k_p and k_c for PCl_5 Dissociation.

k_c Derivation – 2 ½ mark

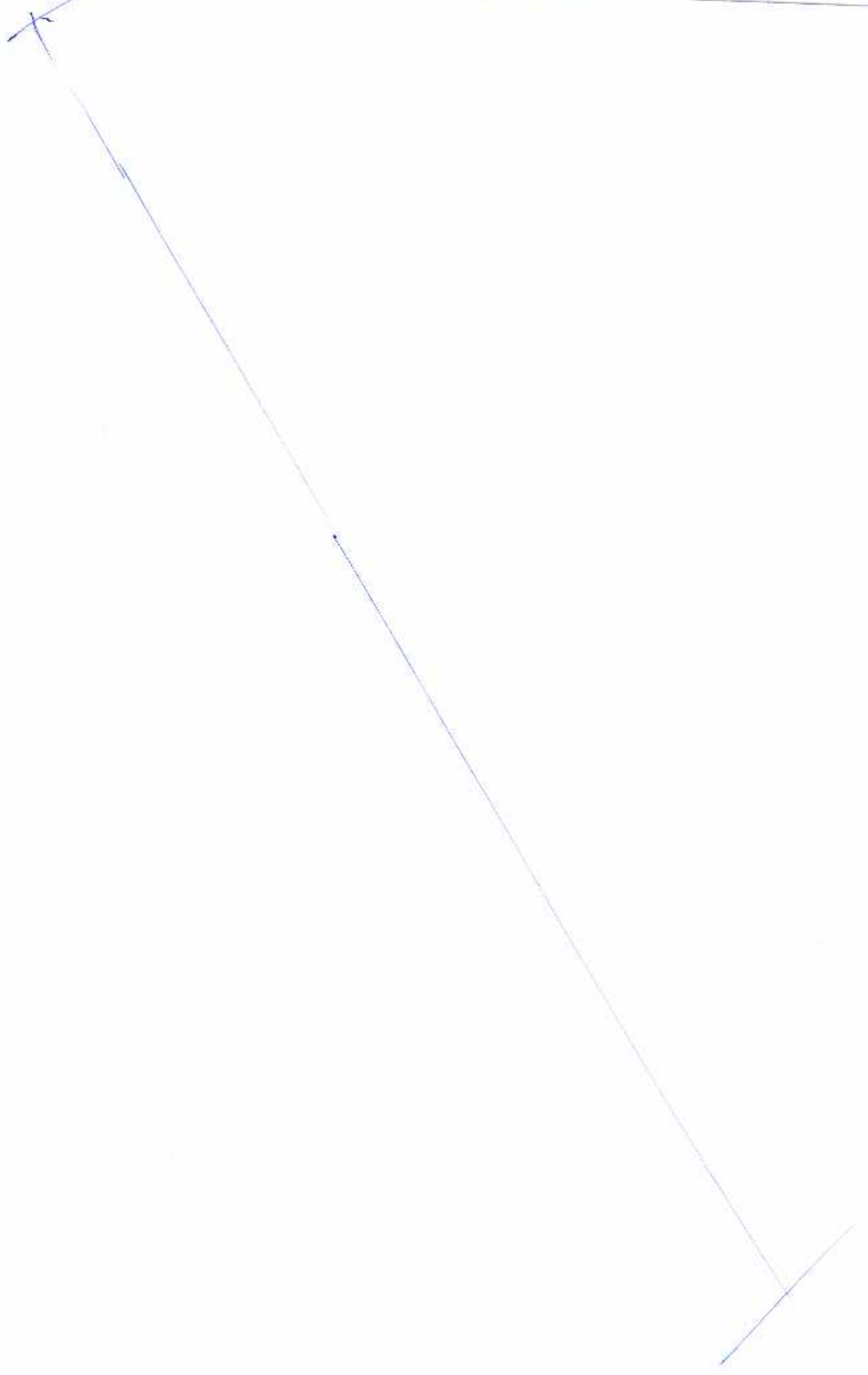
k_p Derivation – 2 ½ mark

(OR)

(b) Consequtive reactions – 2 mark

Parallel reaction – 9 ½ mark

Opposing reaction – 1 ½ mark



37. a) Derivation of Nernst equation.

$A + B \rightleftharpoons C + D$ — ½ mark

$-\Delta G = -\Delta G^\circ - RT \ln J$ — ½ mark

$-\Delta G = -\Delta G^\circ - RT \ln \frac{a_C \times a_D}{a_A \times a_B}$ — 1 mark

$E = E^\circ - \frac{RT}{nF} \ln \frac{a_C \times a_D}{a_A \times a_B}$ — 1 mark

$E = E^\circ - \frac{RT}{nf} \ln \frac{[C][D]}{[A][B]}$ — 1 mark

$E = E^\circ - 2.303 \frac{RT}{nF} \log k$ — 1 mark

(OR)

(b) Preparation of anisole.

– 3 preparations – 5 mark

38. (a) (i) Trans – esterification

Statement – 1 mark

equation – 1½ mark

(ii) Sandmeyer reaction.

Statement – 1 mark.

equation – 1½ mark

(b)(i) Zwitter ion :

Explanation – 1½ mark

formula – 1 mark

(ii) Analgesics :

Explanation – 1½ mark

Example – 1 mark.

Handling Teachers

1. J. Seth
2. [illegible]
3. [illegible]
4. [illegible]
5. Smith
6. N. Sudha.
7. S.S. [illegible]

[illegible] 30/1/14