

Section-B

Answer any five questions

5x3 = 15m

1. Write ESR spectrum of $\cdot\text{CH}_3$?
2. Discuss coupling constants?
3. Write a short note on partition function?
4. Write Nernst heat theorem?
5. Calculate the emf of a concentration cell at 25°C .
 $\text{Ag(s)}/\text{AgNO}_3(0.01\text{M})//\text{AgNO}_3(0.05\text{M})/\text{Ag(s)}$
6. Write a note on fuel cells?
7. What is the basic principle of voltammetry?
8. What is stern model of electrical double layer?

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P.R. GOVERNMENT COLLEGE (AUTONOMOUS), KAKINADA
PG SECOND SEMESTER END EXAMINATIONS-DECEMBER -2022
M. Sc., : ANALYTICAL & ORGANIC CHEMISTRY: PAPER 2

INORGANIC CHEMISTRY

DATE	05.12.2022	SESSION	FN	MAX. MARKS	75	TIME	3 HRS
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SECTION:A

Answer all questions

4X15=60M

- (a) Explain the favorable conditions for the formation of metal clusters?
Discuss the structure and bonding in $\text{Re}_2\text{Cl}_8^{2-}$
(OR)
(b) Explain the structure and bonding of (i) $\text{Cr}_2\text{Cl}_9^{3-}$ (ii) Re_3Cl_9 (iii) $\text{Nb}_6\text{X}_{12}^{2-}$
- (a) Explain the synthesis, structure and bonding in ferrocene
(OR)
(b) What is 18 electron rule? Discuss the preparation, structure and bonding in Metal nitric oxide complexes
- (a) Explain Inert and labile complexes. Discuss the factors affecting stability of complexes.
(OR)
(b) What are oxygen transport enzymes? Discuss the mechanism of oxygen transport by Haemoglobin
- (a) Discuss the mechanism of Acid and Base hydrolysis of Co(III) complex
(OR)
(b) What is Trans effect? Discuss the polarization and pi bonding theories of trans effect.

SECTION -B

Answer any Five questions

5x3=15 M

- Write a note on Chevrel phases
- Discuss the structure of $\text{Cu}_2(\text{RCOO})_4(\text{H}_2\text{O})_2$
- Explain the 18 electron rule with suitable examples
- Write a note on Homogeneous catalysis
- What is Nitrogen fixation?



6. Explain the lability on the basis of CFT.
7. Explain I_d and I_a mechanism.
8. What are complementary and non complementary reactions?