C. ABDUL HAKEEM COLLEGE (AUTONOMOUS),
MELVISHARAM - 632 509.
SEMESTER EXAMINATIONS, NOVEMBER - 2018

B.Sc., CHEMISTRY **SEMESTER V**

U15MCH501 – INORGANIC CHEMISTRY - I

Time: Three Hours Maximum: 75 Marks

SECTION - A (10 X 2 = 20 Marks)

Answer **ALL** Questions.

1. What is DMG? Write its use in gravimetric analysis.
2. What are the factors that affect the theromogram in TGA?
3. What are complex ion and ligands?
4. Give IUPAC names to the following a) $[Cr(H_2O)_4Cl_2]Cl$ b) $K_3[Fe(CN)_6]$.
5. Define - Effective atomic number (EAN) rule. Calculate EAN for $[Ni(CO)_4]$.
6. Explain primary valency in Werner's theory.
7. Write the role of phosphorus in biological activities.
8. What are metal carbonyls?
9. What are pseudo halogens? Give an example.
10. Arrange the halogens in the order of oxidizing power. Give reason.

SECTION - B (5 X 5 = 25 Marks)

Answer **ALL** Questions.

11. a) Write the principle and important applications of differential thermal analysis.

(Or)

b) What are the sources of random errors?

12. a) What is chelation? Discuss the applications of EDTA.

(Or)

b) Explain hydrate isomerism.

13. a) Discuss the Splitting of metal d-Orbitals in square complexes.

(Or)

b) Explain low and high spin complexes.

14. a) How Aluminium is estimated using Oxine?

(Or)

b) What is Pi-acceptor ligand? Explain compounds of P as acceptor ligands.

15. a) Account on the similarities and dissimilarities between pseudo halogens and halogens.

(Or)

b) Compare the general characteristics of halogens.

SECTION - C (3 X10 = 30 Marks)

Answer **ANY THREE** Questions.

16. a) Discuss the factors affecting TGA and DTA curves.

b) Explain the instrumentation of the TGA.

17. a) Explain linkage and polymerization isomerism of Co-ordination Complexes.

b) Explain why Chelate complexes are more stable than non-Chelate Complexes.

18. a) Explain werner's theory of Co-ordination complexes.

b) Draw the crystal field splitting and energy level diagram of $[Ni(CN)_4]^{2-}$ and account for its diamagnetic character.

19. Discuss the application of Co-ordination Compounds in qualitative and quantitative analysis with two examples each.
20. a) Give a comparative study about electro negativity, electron affinity and oxidizing power of halogens.

    b) Discuss the important Oxides and Oxy acids of halogens.

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