

M.Sc.(Chem.) Semester - 2 (CBCS) Examination
March/April -2019 (Old Course)
INORGANIC CHEMISTRY (CORE)

Time: 2:30 Hours

Marks: 70

Instructions:

1. All questions are compulsory.
 2. Figures to the right indicate marks.
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- Q.1 Answer the following: (Any Seven) 14**
- (a) Discuss the toxicity of As.
 - (b) Give the classification of essential elements in short.
 - (c) Draw the structure of porphyrin.
 - (d) Give the principal of ESR.
 - (e) What is Anisotropic 'g' value in ESR.
 - (f) Give the difference between σ -bonded and π -bonded organometallic compounds.
 - (g) Write a short note on oxine.
 - (h) Write a short note on o-phenanthroline.
 - (i) Give the example of compound which can be studied by ESR spectroscopy.
 - (j) Draw the structure of $[\text{Fe}(\eta^5\text{-Cp})_2]$.
- Q.2 Answer the following: (Any Two) 14**
- (a) Discuss the physiology of blood.
 - (b) What is Hyperfine splitting in ESR? Explain in detail.
 - (c) Give application of ESR to determine structure of compounds.
- Q.3 Answer the following: 14**
- (a) Explain the toxicity and deficiency of any three metal elements.
 - (b) Write note on different types of Exchangers.
- OR**
- Q.3 Answer the following:**
- (a) Write a note on (I) Diphenyl carbazone (II) Diphenyl carbazide.
 - (b) Discuss bonding in organometallic compounds of transition metals.
- Q.4 Answer the following: (Any Two) 14**
- (a) Discuss the separation of chloride and bromide by ion exchange method.
 - (b) Discuss the classification of $\pi(\text{Pi})$ -bonded OMC of transition metals.
 - (c) Write detail note on σ -bonded OMC of Transition metals.
- Q.5 Answer the following: (Any Two) 14**
- (a) Discuss the ESR Spectrum of H_2^+ .
 - (b) Discuss the structure and bonding in η^2 - Alkene complexes.
 - (c) Explain the separation of Co-Ni using ion Exchange Chromatography.
 - (d) Discuss the role of Na, K, Ca and Mg in biological processes.
