



PAQ-003-010201 Seat No. _____

M. Sc. (Sem. II) Examination

August - 2020

C - 201 : Inorganic Chemistry
(Old Course)

Faculty Code : 003

Subject Code : 010201

Time : Hours]

[Total Marks : 70

- Instructions :** (1) All Questions are compulsory.
(2) All Questions carry equal Marks.

- 1 Answer the following : (Any Seven) 14**
- (a) Define σ -bonded OMC
 - (b) Discuss the limitations of ESR spectroscopy
 - (c) Draw the structure of Zeise's Salt
 - (d) Explain the role of bulk element in human body which is essential for protein and nucleic acid synthesis
 - (e) Discuss the use of Ion exchange chromatography
 - (f) Draw the structure of Ferrocene
 - (g) Draw the ESR spectrum when one electron influenced by a single proton of the
 - (h) Write the reaction for the synthesis of strong basic cation exchange resin
 - (i) List the fundamental requirements of a resin
 - (j) Give the difference between isotropic 'g' value and anisotropic 'g' value in ESR spectroscopy
- 2 Answer the following : (Any Two) 14**
- (a) Discuss the preparative methods of η^3 -allyl OMC of transition metals
 - (b) Give the classification and role of metal ions according to their action in Biological System
 - (c) Write short note on ESR instrumentation

- 3** Answer the following : (Any Two) **14**
- (a) What is Hyperfine splitting in ESR spectroscopy
 - (b) Write note on the role of Iodine in activity of Thyroid hormones
 - (c) Give the classification of π -bonded OMC of transition metals

- 4** Answer the following : **14**
- (a) Discuss the ESR spectrum of $H_2\bullet$
 - (b) Discuss ion exchange Separation technique of following:
Chloride and bromide

- 5** Answer the following : **14**
- (a) Describe toxic elements, toxicity and deficiency with suitable example
 - (b) Discuss the physical properties of π -bonded OMC of transition metals

OR

- 5** Answer the following : **14**
- (a) Discuss Metalloporphyrins in detail.
 - (b) Define Ion Exchange Chromatography and its use in separation of Cadmium and Zinc.
 - (c) Discuss Physiology of blood.
