



**MBZ-003-1102001** Seat No. \_\_\_\_\_

**M. Sc. (Sem. II) (CBCS) Examination**

**April / May - 2018**

**C - 201 : Inorganic Chemistry**

**Faculty Code : 003**

**Subject Code : 1102001**

Time :  $2\frac{1}{2}$  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  $\sigma$ -bonded OMC
- (b) Discuss the limitations of ESR spectroscopy
- (c) Draw the structure of Zeise's Salt
- (d) Discuss the work of Hemoglobin in our body
- (e) Discuss the use of Ion exchange chromatography
- (f) Discuss the role of Tannin in analysis
- (g) Draw the ESR spectrum when one electron influenced by a single proton of the
- (h) Discuss Physiology of blood
- (i) Name some of the most important Ion exchange resins
- (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  $\eta^3$  - 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  $\pi$  – bonded OMC of transition metals

- 4** Answer the following : **14**
- (a) Discuss the preparation and use of following reagents in Inorganic analysis
    - (1) DMG
    - (2) Salicylaldehyde
  - (b) Discuss the ESR spectrum of  $H_2^+$ .

- 5** Answer the following : **14**
- (a) Describe toxic elements, toxicity and deficiency with suitable example
  - (b) Discuss the physical properties of  $\pi$ –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.