

M.Sc.(Chem.) Semester - 2 (CBCS) Examination
August/September -2020 [OLD COURSE]
INORGANIC CHEMISTRY (CORE)

Time: 2:00 Hours**Marks: 56****Instructions:**

1. Figure to the right indicate marks.
 2. There are five questions in the question paper.
 3. Answer any four of the following questions.
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Q.1 Answer the following: (Any Seven) 14

- (a) Write a classification of ion exchange resin in short.
- (b) Give the name of essential element found in biological system.
- (c) Write a short note on diphenyl carbazone.
- (d) Explain the Zeeman effect in ESR spectroscopy.
- (e) What is metalloporphyrin? Explain with suitable example.
- (f) Draw the structure of tannin and write its applications.
- (g) Give the definition of organometallic compound with its example.
- (h) Draw the structure of Zeise's Salt.
- (i) Give the definition and limitation of ESR spectroscopy.
- (j) Discuss the chemical properties of η^2 -alkene complexes in brief.

Q.2 Answer the following: (Any Two) 14

- (a) Discuss the preparation of σ -bonded organometallic compound.
- (b) Discuss in the instrumentation of ESR.
- (c) Discuss the transport and storage protein in detail.

Q.3 Answer the following: 14

- (a) Write a note on physical and chemical properties of η^3 -allyl complexes.
- (b) Explain the separation of Cd-Zn and Zn-Mg using ion exchange chromatography.

OR

Q.3 Answer the following:

- (a) Explain the term chemical toxicity and toxic elements.
- (b) Explain the general characteristics and chemical reaction of σ -bonded OMC.

Q.4 Answer the following: (Any Three) 14

- (a) Discuss the following:
(I) Dithiooxamide (II) Benzidine.
- (b) Explain the ESR line H-atom.
- (c) Give the classification of π -bonded OMC of transition metals

Q.5 Answer the following: (Any Two) 14

- (a) Explain the Hyperfine splitting in ESR spectrum.
- (b) Write a note on iodine and thyroid hormones.
- (c) Discuss the separation of Cl and Br by ion exchange.
- (d) Discuss the preparation and use of following reagents in Inorganic analysis.
(1) Anthranilic Acid (2) Salicylaldehyde
