

M.Sc.(Chem.) Semester - 2 (CBCS) Examination
March/April – 2026 (As Per Syllabus Year-2023)
Inorganic Chemistry (Core)

Time: 2:30 Hours**Marks:70****Instructions:**

1. All questions are compulsory.
2. Figures to the right indicate marks.

Q.1(A) Answer the following. (04)

- (1) What is metal carbonyl? Give its classification and spectroscopic properties.

Q.1(B) Answer any two questions out of three. (10)

- (1) Discuss the ligand which have similar characteristic like CO.
- (2) Explain structure and bonding in alkene ligand.
- (3) Write a note on metal complexes of carbenes, carbynes, carbides ligands.

Q.2(A) Answer the following. (04)

- (1) Explain the Ziegler–Natta polymerizations.

Q.2(B) Answer any two questions out of three. (10)

- (1) Explain hydroformylation reaction by Rh and Co.
- (2) Explain the reaction involving modification of ligands.
- (3) Write detail note on olefin metathesis.

Q.3(A) Answer the following. (04)

- (1) Discuss the physical properties of nobel gas family.

Q.3(B) Answer any two questions out of three. (10)

- (1) Write a note on oxidation state of boron family.
- (2) Discuss the chemical properties and structure of xenon compounds.
- (3) Gives the detailed information on catenation and allotropes of carbon.

Q.4(A) Answer the following. (04)

- (1) Explain Fe_3S_4 and Fe_4S_4 briefly.

Q.4(B) Answer any two questions out of three. (10)

- (1) Discuss the metalloenzymes and it's functioning.
- (2) Discuss the importance and deficiency of iron, cobalt and copper.
- (3) Write a note on oxygen transport devices like Hb, He and Hc.

Q.5(A) Answer the following (04)

- (1) Write a note on Antacid.

Q.5(B) Answer any two questions out of three. (10)

- (1) Discuss the clinical application of Ca drugs.
- (2) Write a note on radioactive compounds and their clinical applications.
- (3) Explain detoxification and chelating agents in detail.
