

M.Sc.(Chem.) Semester - 2 (CBCS) Examination

March/April- 2018

INORGANIC CHEMISTRY

(CORE)

Time: 2:30 Hours

Marks: 70

Instructions:

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

Q.1 Answer any **seven** of the following ten questions. (14)

1. What is the importance of iron in human body?
2. What is Ion-Exchangers? Give the classification of Ion-Exchanger.
3. Draw the structure of Hemoglobin.
4. Explain the toxicity of Lead.
5. Give the applications of Aluminon.
6. What is the limitations of ESR spectroscopy?
7. Define the Organometallic compound with and give any two examples.
8. What is g (gyro magnetic) factor ratio in ESR?
9. Discuss eighteen electron rule in organometallic compound.
10. Give the applications of DMG in inorganic analysis.

Q.2 Answer any **two** of the following three questions. (14)

1. Explain in brief Zeeman Splitting in ESR.
2. Discuss the structure of Chlorophyll and its role in photosynthesis.
3. Explain the physical properties of η^2 alkene OMC in transition metals.

Q.3 Answer the following questions. (14)

1. Discuss the transport and storage of Protein.
2. Give the use of following reagents in inorganic analysis:
(i) Cupferron (ii) Pyragallol

OR

Q.3 Answer the following questions. (14)

1. Discuss the role of iodine in activity of thyroid hormones.
2. Discuss the preparation of π -bonded complex compound containing transition metals.

Q.4 Answer any **two** of the following three questions. (14)

1. Discuss ESR spectrum of one electron influenced by single proton.
2. Explain the chemical properties of η^3 complexes.
3. Give the use of following reagents in inorganic analysis:
(i) Dithiozone (ii) Diphenyl carbazone

Q.5 Answer any **two** of the following four questions. (14)

1. Give the classification of σ -bonded OMC of transition metals.
2. Discuss the experimental technique for the separation of following ions:
(i) Zinc and Magnesium
(ii) Chloride and Bromide
3. Explain the role of bulk metal in biological process.
4. Give the applications of different types of ion-exchangers.
