

B.Sc.- III (CBCS Pattern) Sem-VI
CHT13 - Chemistry-I : Discipline Specific Elective Chemistry-V :
Inorganic Chemistry

P. Pages : 2

Time : Three Hours



GUG/W/22/13341

Max. Marks : 50

- Notes :
1. All questions carry equal marks.
 2. Diagrams and Chemical equation should be given wherever necessary.
 3. Illustrate your answers wherever necessary with the help of neat sketches.
 4. Use of slide rule, Logarithmic Tables, Steam Tables, Moldier's Chart, Drawing Instrument, Thermodynamic tables for moist air, Psychometric Charts and Refrigeration charts in permitted. Non Programmable Electronic calculator is allowed.
 5. Discuss the reaction, Mechanism wherever necessary.

1. a) What is error? Discuss various types of errors with suitable examples. 5
- b) Describe basic principles and instrumentation of flame photometer with a well labelled diagram. 5

OR

- c) Explain T test with example. 2½
- d) Distinguish between accuracy and precision. 2½
- e) Write various application of flame photometry 2½
- f) Explain effect of solvent in flame photometry. 2½
2. a) Describe principle and technique used in paper chromatography. 5
- b) What are fertilizers ? Discuss the classification of fertilizers with suitable example. 5

OR

- c) Write a short note on Entisols. 2½
- d) Describe in detail the volumetric method for detection of organic carbon in soil. 2½
- e) Explain principle of column chromatography. 2½
- f) Give applications of solvent extraction technique. 2½
3. a) What are organometallic compounds? Give their classification with suitable? Examples. 5
- b) Write the method of preparation of gold and silver nanomaterial. 5

OR

- c) Explain in detail carbon nanotubes. 2½
- d) Write a note on Bioinorganic nanomaterials. 2½
- e) How aluminium alkyls are obtained from. 2½
- a) Grignard reagent b) Alkene
- f) Write a note on Wilkinson Catalyst. 2½

4. a) Describe primary and secondary treatment method for industrial effluent. 5
 b) Explain following water purification techniques. 5
 i) Reverse osmosis (Ro)
 ii) Electrodialysis
- OR**
- c) Explain treatment method used for agro effluent? 2½
 d) Write a note on aquatic ecosystem. 2½
 e) Explain ion exchange method of water purification. 2½
 f) Write techniques used for measuring water pollution. 2½

5. Solve **any ten**. 10

- i) Define average deviation.
 ii) What is Nebuliser?
 iii) Give any two limitations of flame photometer
 iv) What is $R+$ value?
 v) Define stationary phase
 vi) What is compost?
 vii) Define soil
 viii) Give any two applications of organometallic compounds.
 ix) Write IUPAC name of
 a) $(C_6H_5)_4Je$ b) C_2H_5BeH
 x) Define nanomaterials?
 xi) What is sedimentation?
 xii) What do you mean by TDS?
 xiii) Define Hydrological cycle
