

- d) Explain the method for the preparation of gold nanoparticle. 2½
- e) Write the note on inorganic nanotubes. 2½
- f) Discuss the any two methods for the preparation of alkyl and aryl of tin. 2½
4. a) Explain the following for water treatment and purification. 5
- i) Electro dialysis
- ii) Reverse Osmosis
- b) Discuss the sources and nature of water pollutants. 5

OR

- c) Mention the water quality parameter for the industrial water and domestic water. 2½
- d) Discuss the impact of water pollution on ecosystem. 2½
- e) Write a note on hydrological cycle. 2½
- f) Explain ion-exchange method for water purification. 2½
5. Solve **any ten**. 10
- i) Write application of flame photometry.
- ii) Choice of source in flame photometry.
- iii) Write a short note on monochromator used in the flame photometry.
- iv) Write a note on entisols.
- v) Define ion exchange capacity.
- vi) What is column chromatography.
- vii) Name of following organometallic compound
- a) $\text{CH}_3 - \text{Mg} - \text{Br}$
- b) $(\text{C}_6\text{H}_5)_2 - \text{Hg}$
- viii) Define Nanomaterials.
- ix) Write application of alkyl alluminium.
- x) Note on incineration of waste.
- xi) What is sludge disposal.
- xii) What are the water resources.
