

P P SAVANI UNIVERSITY

Fourth Semester of B. Tech. Examination

December 2021

SECH2061 Physical, Inorganic & Analytical Chemistry

10.12.2021, Friday

Time: 09:00 a.m. To 11:30 a.m.

Maximum Marks: 60

Instructions:

1. The question paper comprises of two sections.
2. Section I and II must be attempted in separate answer sheets.
3. Make suitable assumptions and draw neat figures wherever required.
4. Use of scientific calculator is allowed.

SECTION - I

- Q - 1** (i) Why Graphite is used in the Pencil? [10]
(ii) What is corrosion? State the factors affecting rate of corrosion.
(iii) "Blood is a buffer solution", explain.
(iv) Pure Iron is corroded in moist air while stainless steel is not corroded. Why?
(v) Define: Conductivity and Specific Conductivity.
- Q - 2** (i) What is Electro chemical series? Give its significance. State Faraday's laws of Electrolysis. [10]
(ii) What are colloidal solution and its type? Write the two or three important properties of colloidal solution.
- Q - 3** (i) Explain Phase Rule, its merits, demerits and Industrial application. [10]
(ii) Describe two component systems involving eutectic systems (Pb-Ag) and its applications.

SECTION - II

- Q - 1** (i) What is nuclear fission and fusion process? Explain working of nuclear reactor. [10]
(ii) Describe the working principle of G.M. Counter-scintillation detector.
- Q - 2** (i) What is Green synthesis? Explain Green synthesis with two examples (adipic acid, catechol). [10]
(ii) What is nuclear waste? Explain disposal of nuclear waste with suitable examples.
- Q - 3** Explain working principle of TGA and FTIR. Industrial applications of TGA and FTIR any three. [10]