

B.Tech I Year I Semester (R19) Regular Examinations January 2020

ENGINEERING CHEMISTRY

(Mechanical Engineering)

Time: 3 hours

Max. Marks: 70

PART – A
(Compulsory Question)

- 1 Answer the following: (10 X 02 = 20 Marks)
- What is meant by a soft water and hard water?
 - How is the exhausted zeolite softener bed regenerated?
 - Write a short note on corrosion.
 - Write about the primary cells?
 - What are polymers? Give suitable examples?
 - Why is Bakelite a thermosetting polymer?
 - What are lubricants? Give one example.
 - What is building materials?
 - Explain the terms sorption and desorption.
 - Why does a gas mixed with another gas not form a colloidal system?

PART – B
(Answer all five units, 5 X 10 = 50 Marks)**UNIT – I**

- 2 What are boiler troubles? Explain in detail.

OR

- 3 Explain about Ion-Exchange process with neat diagram.

UNIT – II

- 4 (a) Explain about the factors affecting the corrosion.
(b) Write a note on differences between a cell & battery.

OR

- 5 (a) What are the basic principles of fuel cells?
(b) Write a short note on Galvanic corrosion.

UNIT – III

- 6 (a) What are thermosetting & thermoplastic polymers? Give examples for each one.
(b) Write about applications of PVC & Bakelite.

OR

- 7 (a) What are elastomers? Describe their properties?
(b) Discuss about mechanism of chain growth.

UNIT – IV

- 8 (a) Write about properties of lubricating oils and its applications.
(b) Write a short note on reinforced composites.

OR

- 9 (a) Explain setting and hardening of cement.
(b) Write a note on applications of refractories.

UNIT – V

- 10 (a) Explain about chemical and electrochemical methods of nanomaterials.
(b) Write a short note on micelle formation.

OR

- 11 (a) Discuss about synthesis of colloids.
(b) Write a short note on solid-gas interface.