

**I B.Tech. I Semester Supplementary Examinations, November - 2020****ENGINEERING CHEMISTRY**

(Com. to CE,ME,Aero E, Bio-Tech, Chem E,Min E, Metal E, PE,PChem E, Auto E)

Time: 3 hours

Max. Marks: 70

- Note: 1. Question Paper consists of two parts (**Part-A** and **Part-B**)  
2. Answering **ALL** the questions in **Part-A** is Compulsory  
3. Answer any **FOUR** Questions from **Part-B**

**PART -A**

1. a) What are elastomers? Give its applications. (2M)
- b) What are the advantages of catalytic cracking over thermal cracking? (2M)
- c) What is power alcohol? Discuss its advantages as fuel. (2M)
- d) What do you understand by passivity? What is its significance? (2M)
- e) What is the principle behind internal treatment of water? (2M)
- f) How are refractories classified? Give examples. (2M)
- g) Write any three differences between Type-I and Type-II superconductors. (2M)

**PART -B**

2. a) Explain the influence of mechanical properties on polymers. (8M)
- b) Discuss biodegradable polymers. (6M)
3. a) Write notes on (i) petrol knocking (ii) natural gas. (8M)
- b) Explain fixed bed catalytic cracking method in manufacture of gasoline. (6M)
4. a) Discuss electrochemical theory of corrosion. (8M)
- b) Explain (i) Li cells (ii) zinc air batteries. (6M)
5. a) Discuss the applications of carbon nanoparticles. (6M)
- b) Explain aqueous phase method and supercritical fluid method of green synthesis. (8M)
6. a) Describe hot lime soda process for softening of water? Mention its advantages over cold lime soda process. (8M)
- b) What are boiler troubles? Discuss about boiler corrosion. (6M)
7. a) Explain the manufacturing of Portland cement. (8M)
- b) (i) Discuss thin film lubrication. (ii) Define flash and fire point (6M)