

**I B. Tech I Semester Supplementary Examinations, April - 2022****ENGINEERING CHEMISTRY**

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

Time: 3 hours

Max. Marks: 70

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

1. a) What are thermosetting plastics? (2M)
- b) What is higher and lower calorific value? (2M)
- c) What is meant by passivity? (2M)
- d) Explain type-I superconductors. (2M)
- e) What is meant by sterilization of water? (2M)
- f) Write the anodic and cathodic reactions of hydrogen-oxygen fuel cell. (2M)
- g) What are the constituents of cement? (2M)

**PART -B**

2. a) Discuss the preparation, properties and applications of Bakelite. (7M)
- b) What is natural rubber? Mention its drawbacks and how can it be improved. (7M)
3. a) Explain the working of bomb calorimeter. (7M)
- b) Discuss fluid cracking method for preparation of gasoline. (7M)
4. a) Discuss sacrificial anodic and impressed current cathodic protection. (7M)
- b) Explain the working of (i) Dry cell (ii) Ni-Metal hydride cells. (7M)
5. a) What are liquid crystals? Mention the applications of liquid crystals. (7M)
- b) Discuss arc discharge method for preparation of CNT's. (7M)
6. a) Explain complexometric method for determination of hardness of water. (7M)
- b) Discuss ion-exchange method for softening of water. (7M)
7. a) Discuss the characteristics and classification of refractories. (7M)
- b) Explain the setting and hardening of cement. (7M)

