

**I B. TECH I SEMESTER REGULAR EXAMINATIONS, AUGUST - 2021**  
**APPLIED CHEMISTRY**  
**(Common to CSE, IT, CSM, AID, CSO and CIC)**

Time: 3 Hours

Max. Marks: 70

Note: Answer ONE question from each unit (5 × 14 = 70 Marks)

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UNIT-I

1. a) What are the Drawbacks of raw rubber? How those drawbacks are overcome by Vulcanization? [8M]
- b) Write about emulsion polymerization method. [6M]
- (OR)
2. a) Discuss step wise preparation of Bakelite. [6M]
- b) Write about Carbon Fibre (CF) and Glass Fibre (GF) reinforced polymers. [8M]

UNIT-II

3. a) Write about working and applications H<sub>2</sub>-O<sub>2</sub> fuel cell. [7M]
- b) Describe the construction & working of Calomel electrode. [7M]
- (OR)
4. a) Discuss about electrochemical corrosion. [8M]
- b) How cathodic protection method save metals from corrosion? Explain briefly. [6M]

UNIT-III

5. a) Explain preparation of semiconductors by zone refining and distillation methods. [8M]
- b) Write about synthesis and applications of Fullerenes. [7M]
- (OR)
6. a) Give brief note on construction of P- & n-type semiconductors. [7M]
- b) Write about various types of liquid crystals. [7M]

UNIT-IV

7. a) Discuss about Catenanes and Rotaxanes. [7M]
- b) Explain about natural molecular motors. [7M]

(OR)

8. a) Write in detail about microwave assisted chemical reactions. [7M]  
b) Discuss about role of green solvents in organic synthesis. [7M]

UNIT-V

9. a) What is finger print region? Give its importance in distinguishing various functional groups. [5M]  
b) State Frank-Condon principle. [3M]  
c) Explain about Beer-Lamberts Law? Give its limitations. [6M]

(OR)

10. a) Describe the construction of closed cycle OTEC with a neat sketch. Give the advantages of hybrid cycle OTEC over closed cycle OTEC. [8M]  
b) Write about various types of molecular spectra. [6M]

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