

I B. Tech II Semester Regular Examinations, December - 2020**APPLIED CHEMISTRY**
(Common to EEE and ECE)**Time : 3 hours****Max. Marks: 60****Note : Answer ONE question from each unit (5 × 12 = 60 Marks)**
~~~~~**UNIT - I**

1. a) Differentiate between emulsion and suspension polymerisation. 4M  
b) Explain stepwise preparation of Bakelite including its applications. 5M  
c) Give merits and application of biodegradable polymers. 3M

**(OR)**

2. a) What are the draw backs of raw rubber? Write about Vulcanization of rubber. 5M  
b) Discuss briefly about Fibre Reinforced Plastics with suitable example. 4M  
c) How polyacetylene show better conductivity? Explain 3M

**UNIT – II**

3. a) Illustrate the merits of Lithium ion battery over other batteries. 4M  
b) Explain differential aeration corrosion with example. 4M  
c) What are the main differences between electrochemical series and galvanic series? 4M

**(OR)**

4. a) How to give better protection to metals against corrosion by any one of the methods? Discuss about it. 5M  
b) Describe the construction & working of Calomel electrode. 4M  
c) What is over voltage? How it affect the corrosion rate? 3M

**UNIT – III**

5. a) Explain preparation of semiconductors by zone refining method. 5M  
b) Write industrial applications of carbon nano tubes. 4M  
c) Give few applications of nematic and smectic LCs. 3M

**(OR)**

6. a) Give brief note on construction of P-type semiconductor. 4M  
b) Differentiate between type-I and type-II super conductors. 4M  
c) What are liquid crystals? Give its classification. 4M

**UNIT –IV**

7. a) What is phase transfer catalyst? Give its role in organic synthesis. 4M  
b) What is green synthesis? Give any one green synthetic method. 4M  
c) Justify the principle 'atom economy' with a suitable example. 4M

**(OR)**

8. a) Give some examples of micro wave assisted chemical reactions. 4M  
b) Discuss the role of green solvents in synthetic process. 4M  
c) Write short note on rotaxanes with examples. 4M

**UNIT –V**

9. a) Derive the equation for Beer-Lambert's law. 3M  
b) What is finger print region? Give its importance. 4M  
c) Describe the construction and working of Photovoltaic cell. 5M

**(OR)**

10. a) Write the applications of NMR spectroscopy. 4M  
b) Differentiate open cycle OTEC from hybrid OTEC. 4M  
c) What is electromagnetic spectrum? Give its uses. 4M

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