Code No: **R201215** **R20** **SET - 1**

I B. Tech II Semester Supplementary Examinations, Jan/Feb-2024

APPLIED CHEMISTRY

(Common to CSE, CSE-CS&T, IT, CSE-CS, CSE-IOT&CS Incl BCT, CSE-CS&BS, CSE-IOT, Cyber Security)

Time: 3 hours Max. Marks: 70

Answer any five Questions one Question from Each Unit
All Questions Carry Equal Marks

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UNIT -I

1. a) Describe the biomedical applications of polymers with appropriate examples. [7M]
   b) What is polymerization? Discuss the mechanical properties of polymers. [7M]

(OR)

2. a) Write a note on various methods of fabrication of plastics. [7M]
   b) Discuss the preparation, properties and applications of PVC. [7M]

UNIT-II

3. a) Provide a note on the constituents and features of paints. [7M]
   b) What is fuel cell? Discuss the $CH_3OH–O_2$ fuel cell. [7M]

(OR)

4. a) Give a brief note on electrochemical series and its application. [7M]
   b) Discuss the chemical and electro chemical theories of corrosion. [7M]

UNIT-III

5. a) Discuss the theory and application of SEM in the characterization of Nano materials. [7M]
   b) Give an account on Hall effect and its applications. [7M]

(OR)

6. a) Discuss the characteristics and applications of type I super conductors. [7M]
   b) Discuss the zone refining and distillation methods to prepare semiconductors. [7M]

UNIT-IV

7. a) Derive the Beel-Lambert's law of Uv-visible spectroscopy and its limitations. [7M]
   b) Discuss tidal and wave power. [7M]

(OR)

8. a) Draw the block diagram and explain various parts of instrumentation in FT-IR. [7M]
   b) Discuss Frank-condon principle. [7M]

UNIT-V

9. a) Write Introduction to computational chemistry. [7M]
   b) Write a note on acid-base controlled molecular shuttle. [7M]

(OR)

10. a) Explain artificial molecular machine with an example. [7M]
    b) Write the characteristics of molecular motors and molecular machines. [7M]

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