Code No: RR211104 **RR**

II B.Tech I Semester(RR) Supplementary Examinations, May/June 2010
APPLIED CHEMISTRY AND BIO-CHEMISTRY
(Bio-Medical Engineering)

Time: 3 hours **Max Marks: 80**

Answer any FIVE Questions
All Questions carry equal marks

⋆ ⋆ ⋆ ⋆ ⋆

1. (a) Define electrochemical cell. How a galvanic cell functions. Explain Daniel cell with a neat diagram and chemical reactions involved in it.
   (b) Resistance of a conductivity was found to be 200ohms and 250ohms. When filled separately with 0.1N kcl solution and given 0.01N electrolyte solution respectively. Calculate the equivalent conductivity of the given electrolyte when the specific conductivity of 0.1N KCL solution is 0.0129mhos.cm^{-1}. [16]
2. Write notes on the following:
   (a) Bakelite
   (b) Vulcanization of rubber. [16]
3. (a) What is a lubricant? How are lubricants classified? Give Examples.
   (b) Give, with examples, the mechanism of
      i. Hydrodynamic
      ii. Boundary lubrication. [16]
4. (a) What causes hardness to water? What are the advantages and disadvantages of hard water?
   (b) How is the hardness of water removed by ion-exchanged method? Explain. [16]
5. (a) Define cell. How many types of cells are there? Name them. [1+1+2]
   (b) Give suitable examples for each. [2]
   (c) Name the important organ cells of the cell. Explain the centrifugal separation of cell organelles and main functions of the cell. [10]
6. (a) Give classification of enzymes based on their action with suitable examples.
   (b) Explain the extraction and purification of an enzyme from tissues. [16]
7. (a) Differentiate between simple diffusion and facilitated transport across biological membranes giving examples.
   (b) Write briefly on: [16]
      i. channels
      ii. Ionophores.
8. What enzymes and metabolites are present in normal blood and add a note on SGOT and SGPT.[16]

⋆ ⋆ ⋆ ⋆ ⋆