

I Year B.Tech(R09) Supplementary Examinations, December 2010.

## ENGINEERING CHEMISTRY

(Common to Aeronautical Engineering, Biotechnology, Civil Engineering, Mechanical Engineering, Computer Science & Engineering, Electronics & Communication Engineering, Electrical & Electronics Engineering, Electronics & Control Engineering, Electronics & Computer Engineering, Electronics & Instrumentation Engineering, Information Technology, Computer Science & Systems Engineering,)

Time: 3 hours

Max Marks: 70

Answer any FIVE questions  
All questions carry equal marks

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- What are the reactions takes place in the estimation of chlorine present in water?
  - Explain the procedure involved in the determination of chlorine present in water.
- Explain the following:
  - Nickel electroplating
  - Copper electro less plating
- Explain the condensation polymerization with suitable examples.
  - Discuss the functions of various ingredients used in the compounding of rubber.
- Write a short note on:
  - Saponification number.
  - Neutralization number.
  - Aniline point.
- The equivalent conductance of a 0.005N NaOH solution is 240 mho/cm<sup>2</sup>. What is the specific conductance and electrical resistance if the electrodes are 1 cm apart and each have a surface area of 1 cm<sup>2</sup>?
  - On what factors does the conductance of a solution depend? How would you proceed to determine the conductivity of a solution.
- Explain with valid reasons for the following statements with suitable example.
    - Vapour pressure contribute to the composition in a two component system
    - Eutectic point and triple point are the same.
  - Identify the number of phases and components involved in each of the following systems:
    - Decomposition of CaCO<sub>3</sub>.
    - Decomposition of PCl<sub>5</sub>.
- Explain higher calorific value and lower calorific value and distinguish between the HCV & LCV.
  - What are the characteristics of a good fuel?
- Outline the importance of refractories and their applications.
  - Discuss the criteria of a good refractory material?

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