SAHRDAYA COLLEGE OF ENGINEERING & TECHNOLOGY

KODAKARA

Combined I and II Semester B.Tech Degree Examination, April,2013

MODEL QUESTION PAPER

SUBJECT :EN 09 104- ENGINEERING CHEMISTRY

(Common to all branches of B. Tech)

Time : 3 Hours Maximum Marks : 70

**Part – A**

*Answer all the questions. Each question carries 2 Marks (5 X 2 = 10 Marks)*

1. What are liquid crystal polymers. Give one example.
2. What do you mean by break point chlorination
3. Define flash point and fire point of a lubricating oil
4. What is meant by electrochemical series. What is its importance
5. What is stress Corrosion.

**Part - B**

*Answer any four questions, Each question carries 5 Marks ( 4 X 5 = 20 Marks )*

1. What are Carbon nanotubes. Give any four applications of it
2. Give an account of the various steps involved in the free radical mechanism for addition polymerization of a vinyl compound
3. Write briefly on compounding of rubber
4. What is M /MA / A- type electrode. Explain the working of such an electrode with a suitable example
5. What is the basic principle involved in the cathodic protection methods for control of corrosion. Explain the sacrificial anodic protection method
6. What are the causes and consequences of photochemical smog

**Part -C**

*Answer (a) or (b) of each questions. Each question carries 10 Marks( 4 X 10 Marks = 40 )*

1. **(a)** What is band theory for conductivity in solids. Explain the conductivity in n-type and p-type semiconductors based on the theory

**OR**

**(b)**Describe the principle and procedure involved in the estimation of different types

Of hardness present in a water sample.

1. **(a)** Derive Nernst Equation for a single electrode and give its significance.

**(b)** Write a note on solar cells

**OR**

**(b)** Give a detailed note on different mechanisms of lubrication.

1. **(a)** (i) What is a salt bridge. What is its significance

(ii)Explain the determination of e.m.f of a cell by Poggendorff ‘s compensation method

**OR**

**(b)**Explain (i) The construction and working of a Nickel- Cadmium storage cell

(ii) The mechanism of buffering action of a Basic buffer

1. **(a)** What are paints . Give an account of the various constituents and their function in a

paint with examples

**OR**

**(b)** Give an account of different metallic coatings used for corrosion control