Basc.1104   **Engineering Chemistry (2+1)**

Marks:50
Time: 2 hours

I

Fill in the blanks: (10x1=10)

1. The process of removing hardness producing salts from water is called _____
2. _____ is defined as decomposition of bigger hydrocarbons into simpler ones of low molecular weights
3. A polymer which can be softened on heating and hardened on cooling reversibly is called _____
4. A type of chromatography using a sheet of special grade filter paper on adsorbent is termed as _____
5. Nylon 6:6 is obtained by the polymerization of adipic acid with _____

State True or false

6. Wire mesh corrodes faster at the joints.
7. Fluid Film lubrication is involved in delicate machines.
8. On increasing the temperature, the molar conductivity decreases.
9. The disinfecting action of bleaching powder is due to the chlorine made available by it.
10. Spectroscopy involves the interaction between matter and electromagnetic radiation.

II

Write Short notes on ANY FIVE of the following   (5x2=10)

1. How is water demineralised in an ion-exchanger?
2. Octane number.
3. Principle of HPLC.
4. Corrosion inhibitors with two examples.
5. Cathodic protection.
6. Retention factor.
7. What is EMF of a cell? How is it related to ΔG of a cell?

III

Answer ANY FIVE of the following   (5x4=20)

1. What is meant by Reverse osmosis? How is it applied in the desalination of water?
2. Fuels and its classification.
3. Mention the important ingredients of paint and explain their functions.
4. Types of polymerization with examples.
5. What are secondary cells? Describe the construction of one secondary cell.
6. What is a salt bridge? How is it prepared? What are it's functions.
7. Give the principle of column chromatography. Briefly explain the various processes involved in this method.

IV

Answer ANY ONE of the following.   (1x10=10)

1. Derive Nernst equation. How is a calomel electrode constructed? Sketch the electrode.
2. Discuss in detail the properties of lubricants highlighting their importance.

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