

Subject: Applied Chemistry 1 hour Class: First Year Date: 18/2/2015 Marks: 15

Note: 1. All questions carry equal marks.

2. Attempt any 5 out of 10 questions.

- 1) A sample of coal has the following composition by mass C=70% , H=8% ,O= 10% , S=1% , remaining is ash. Calculate HCV & LCV of the coal sample.
- 2) 3.2 g of coal sample was heated at 105 -110°C in an electric oven for 1 hour, after heating & cooling the final weight obtained is 2.9g. Calculate the % of moisture.
- 3) Explain the significance of Volatile matter & Ash in coal.
- 4) Write note on pitting corrosion.
- 5) Write the mechanism of Electrochemical corrosion with Evolution of Hydrogen gas type (Diagram not required).
- 6) Discuss how the following factors affect the rate of corrosion : a) Relative areas of anode & cathode
b) Nature of Ions in electrolyte.
- 7) Discuss Sacrificial anodic method of corrosion protection of metal.
- 8) Explain in brief Metal cladding method of corrosion protection of metal.
- 9) Explain Anodic coating of metal.
- 10) Discuss the functions of a) Pigments b) Thinner in paints and give two examples of each.