

GUJARAT TECHNOLOGICAL UNIVERSITY**BE - SEMESTER-III • EXAMINATION – WINTER • 2014****Subject Code: 130102****Date: 23-12-2014****Subject Name: Chemistry for Aeronautical Engineering****Time: 02.30 pm - 05.00 pm****Total Marks: 70****Instructions:**

1. Attempt all questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.

- Q.1** (a) Enlist the various methods for softening of water. Discuss any one in detail. **07**
(b) Differentiate between scale & sludge. How does the formation of sludge and scales affect boiler performance? Mention the methods to prevent scale formation. **07**
- Q.2** (a) Discuss the physical properties of metals with its examples. **07**
(b) Differentiate chemical corrosion from electrochemical corrosion. Discuss the mechanism of electrochemical corrosion. **07**
- OR**
- (b) Explain the comparisons between solid, liquid and gaseous fuel. **07**
- Q.3** (a) Differentiate between Thermoplastic and Thermosetting Plastic. **07**
(b) What are the drawbacks of raw rubber? Give the advantages of vulcanization. **07**
- OR**
- Q.3** (a) Describe processes of Melt Spinning & Wet Spinning of fibers. **07**
(b) Explain the principle of UV & IR spectroscopy with their applications. **07**
- Q.4** (a) Give the properties and uses of common refractory bricks. **07**
(b) Define lubricant and write a short note on "Mechanism of Lubrication". **07**
- OR**
- Q.4** (a) Write the principle and function of Adsorption Chromatography. **07**
(b) Write a short note on energy crisis and its management. **07**
- Q.5** (a) Give a brief comparison of Electroplating and Electroless plating. **07**
(b) Define the term paint, varnish and enamel. Mention the essential constituents of paint and their function. **07**
- OR**
- Q.5** (a) Justify the statement "Solar energy is the ultimate sources of all types of energy" **07**
(b) Discuss the classification of Insulator. **07**
