

GUJARAT TECHNOLOGICAL UNIVERSITY**BE - SEMESTER-III • EXAMINATION – SUMMER • 2014****Subject Code: 130102****Date: 26-05-2014****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)** Differentiate between scale & sludge. How does the formation of sludge and scales affect boiler performance? Mention the methods to prevent scale formation. **07**
- (b)** Give the characteristics of potable water. Mention various processes for removal of impurities. **07**
- Q.2 (a)** Write short-note on heat treatment of steel and their effects on alloy. **07**
- (b)** Differentiate between chemical corrosion and electro chemical corrosion. **07**
- OR**
- (b)** Give classification of fuel with example. Explain the characteristic of good fuel. **07**
- Q.3 (a)** Differentiate between Thermoplastic and Thermosetting Plastic. **07**
- (b)** What is vulcanization of rubber? Why natural rubber needs vulcanization? How is it carried out? Mention its advantages. **07**
- OR**
- Q.3 (a)** Describe processes of Melt Spinning & Wet Spinning of fibers. **07**
- (b)** Give classification of fibers. **07**
- Q.4 (a)** What are abrasives? Give classification of abrasives. **07**
- (b)** Define the term lubricants. Mention their important function. Discuss the properties of lubricants. **07**
- OR**
- Q.4 (a)** Write the principle and function of Adsorption Chromatography. **07**
- (b)** Give the composition of bio-gas with the help of a diagram. Explain a bio-gas plant. **07**
- Q.5 (a)** Explain in details Electroplating Method for protective coating. **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)** Give classification of refractory material. Discuss properties of Good Refractories. **07**
