Seat No.: _____ Enrolment No._____

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**

****