

Seat No.: \_\_\_\_\_

Enrolment No. \_\_\_\_\_

# GUJARAT TECHNOLOGICAL UNIVERSITY

SEMESTER– 3 EXAMINATION – WINTER 2012

**Subject code: 130102**

**Date: 04/01/2013**

**Subject Name: Chemistry for Aeronautical Engineering**

**Time: 10:30 – 01:00**

**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 different heat treatment process. Discuss “Annealing and quenching” in details. **07**

**(b)** Enlist the various methods for softening of water. Discuss any one in detail. **07**

**Q.2 (a)** Discuss comparisons between solid, liquid and gaseous fuel. **07**

**(b)** Define Plastics and give details of their unique properties. **07**

**OR**

**(b)** What do you mean by chemical conversion coating? Describe phosphate coating and chromate coating in detail. **07**

**Q.3 (a)** Give the properties and uses of common refractory bricks. **07**

**(b)** How polymers can be classified. Discuss any two types in detail. **07**

**OR**

**Q.3 (a)** Write a short note on artificial abrasives. **07**

**(b)** Write a note on synthetic fibers. **07**

**Q.4 (a)** Define corrosion and describe factors influencing corrosion. **07**

**(b)** Give a brief comparison of Electroplating and Electroless plating. **07**

**OR**

**Q.4 (a)** Describe the application of UV spectroscopy. **07**

**Q.4 (b)** Explain the characteristics of good fibers. **07**

**Q.5 (a)** Explain briefly “Solar Cell Energy Device” **07**

**(b)** In which situation, the thermal insulators are used? Give the characteristics of an ideal thermal insulator. **07**

**OR**

**Q.5 (a)** What are the drawbacks of raw rubber? Give the advantages of vulcanization. **07**

**(b)** Define alloys. State the purposes of alloying steel. **07**

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