

**GUJARAT TECHNOLOGICAL UNIVERSITY****BE SEM-III Remedial Examination May 2011****Subject code: 130102****Subject Name: Chemistry for Aeronautical Engg.****Date: 27/05/2011****Time: 10.30 am – 01.00 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 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)** Write short note on **07**

(1) Measurement of viscosity of a lubricating oil

(2) Flash and fire- points apparatus.

**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)** What causes wind to blow? What are the applications of wind energy? **07**

Describe wind mills and generation of electricity through wind mills.

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

**OR**

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

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

**Q.5 (a)** Write a short note on “solar energy devices” **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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