

**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? Describe wind mills and generation of electricity through wind mills. **07**  
(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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