

GUJARAT TECHNOLOGICAL UNIVERSITY**B.E. Sem-III Examination December 2009****Subject code: 130102****Subject Name: Chemistry for Aereonautical Engg****Date: 21 /12 /2009****Time: 11.00 am – 1.30 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 chemical corrosion from electrochemical corrosion. Discuss the mechanism of electrochemical corrosion. **07**
(b) Enlist the various methods for softening of water. Discuss any one in detail. **07**
- Q.2** (a) Which are the “Elementary principles to calculate amount of air required for combustion of unit quantity of 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 are the drawbacks of raw rubber? Give the advantages of vulcanization. **07**
- Q.3** (a) How polymers can be classified. Discuss any two types in detail. **07**
(b) What do you mean by chemical conversion coating? Describe phosphate coating and chromate coating in detail. **07**
OR
- Q.3** (a) Write a note on synthetic fibers. **07**
(b) Give the properties and uses of common refractory bricks. **07**
- Q.4** (a) Give a brief comparison of Electroplating and Electroless plating. **07**
(b) What causes wind to blow? What are the applications of wind energy? **07**
Describe wind mills and generation of electricity through wind mills.
OR
- Q.4** (a) In which situation, the thermal insulators are used? Give the characteristics of an ideal thermal insulator. **07**
(b) Describe the application of IR spectroscopy. **07**
- Q.5** (a) Describe the application of UV spectroscopy. **07**
(b) Write a short note on artificial abrasives. **07**
OR
- Q.5** (a) Enlist different heat treatment process. Discuss “ Annealing and quenching” in details. **07**
(b) Discuss the physical properties of metals. **07**
