

**GUJARAT TECHNOLOGICAL UNIVERSITY**  
**BE - SEMESTER- 1<sup>st</sup> / 2<sup>nd</sup> • EXAMINATION – WINTER 2013**

**Subject Code: 110001****Date: 26-12-2013****Subject Name: Chemistry****Time: 10:30 am – 01:00 pm****Total Marks: 70****Instructions:**

1. Attempt any five questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.

- Q.1** (a) Explain break point chlorination. 4  
(b) Explain temporary & permanent hardness. 4  
(c) Discuss ion exchange method of softening water along with chemical reactions involve in it. 6
- Q.2** (a) Explain briefly Annealing & Hardning. 4  
(b) Explain calcination. 4  
(c) Explain principle, instrumentation & working of IR spectroscopy. 6
- Q.3** (a) Discuss Galvanic corrosion & Pitting corrosion. 4  
(b) What is Pilling Bedworth rule? What is cathodic protection? 4  
(c) Write a note on Electrochemical corrosion in acidic medium & neutral medium. 6
- Q.4** (a) Give characteristics of a good fuel. 4  
(b) What is CNG? Why CNG is preferred over LPG? 4  
(c) Explain Thick-film lubrication & Extreme Pressure lubrication. 6
- Q.5** (a) Give differences between Thermosetting & Thermoplastic polymers. 4  
(b) Discuss preparation , properties & uses of PVC. 4  
(c) Explain with examples Addition & Condensation polymerization. 6
- Q.6** (a) Give an account of acid rain. What is Photochemical smog? 4  
(b) Give characteristics of a good fibre. 4  
(c) Write a detailed note on manufacture of ethyl alcohol from molasses by fermentation. 6
- Q.7** (a) Justify “solar energy is the ultimate source of all types of energy”. 6  
(b) What is a paint? Explain different constituents of paint. 6  
(c) What is sand blasting? 2

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