

**GUJARAT TECHNOLOGICAL UNIVERSITY**  
**B. E. - SEMESTER –I • EXAMINATION – WINTER 2012**

**Subject code: 110001****Date: 30-01-2013****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) Describe Melt spinning and Wet spinning. **07**  
(b) Write a note on Hydro power. **04**  
(c) Give the short note on Global warming . **03**
- Q.2** (a) What is Corrosion? Write a note on chemical and Electro chemical corrosion. **06**  
(b) Discuss the manufacturing of Ethyl alcohol from molasses by fermentation process. **04**  
(c) Mention the compounding materials used in plastic and Give their function. **04**
- Q.3** (a) Give the characteristics of Alloys. What is the purpose to make Alloys. **06**  
(b) Explain TLC method of chromatography. **04**  
(c) Calculate the Total hardness of sample of water containing  $\text{Mg}(\text{HCO}_3)_2 = 7.3 \text{ mg/l}$ ,  $\text{Ca}(\text{HCO}_3)_2 = 16.2 \text{ mg/l}$ ,  $\text{MgCl}_2 = 9.5 \text{ mg/l}$ ,  $\text{CaSO}_4 = 13.6 \text{ mg/l}$ . (Atomic mass of Mg and Ca are 24 and 40). **04**
- Q.4** (a) Define paint and varnish. Give the characteristics and constituent of paint. **06**  
(b) Write a short note on hardness of water. **04**  
(c) Define refractories and give the properties of refractories. **04**
- Q.5** (a) What is lubricants? Give the functions and ideal characteristics of lubricants. **06**  
(b) Give the preparation of Nylon-6,6 and Polyester. **04**  
(c) Give the principle of Conductometric titration and Discuss the curve of weak acid with strong base. **04**
- Q.6** (a) Give classification of lime and manufacturing process of lime. **06**  
(b) Explain Wind energy. **04**  
(c) Why does natural rubber need vulcanization? Discuss the process for vulcanization. **04**
- Q.7** (a) Disuses about Refining of crude oil with diagram of fractional distillation column. **06**  
(b) Give the preparation and uses of Buna-S and Bakelite. **04**  
(c) Classification of fuels with example. **04**

\*\*\*\*\*