

GUJARAT TECHNOLOGICAL UNIVERSITY**B.E Sem-II Examination June 2010****Subject code: 110001****Subject Name: Chemistry****Date: 15 / 06 / 2010****Time: 02.30 pm – 05.00 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) What is corrosion of metals? Explain in details Dry or Chemical corrosion. **07**
- (b) Write short note on Electroplating. **04**
- (c) Explain Break Point Chlorination. **03**

Q.2

- (a) A sample of coal was found to have the following % composition by weight : 7
C= 75%, H= 5.2%, O= 12.1%, N= 3.2% and Ash= 4.5%.
Calculate
1) the Minimum amount of O₂ and air by weight necessary for complete Combustion of coal. **07**
2) Weight of air required, if 40% excess air is supplied.
3) Gross and Net Calorific value of coal sample.

- (b) Discuss Physical properties of metals. **07**
- OR**

- (b) Describe in details Biogas. **07**

Q.3

- (a) What is Desalination? Explain Electrodialysis methods of Desalination. **07**
- (b) Discuss the Disadvantages of Hardness of Water. **04**
- (c) Describe Pitting Corrosion. **03**

OR**Q.3**

- (a) Describe the Determination of Flash Point by Penskey Marten's Methods. **07**
- (b) Write note on Properties of Lubricating Oils. **04**
- (c) Discuss common Refractory Bricks. **03**

Q.4

- (a) Write short note on Manufacture of Portland cement by Wet process. **06**
- (b) Describe processes of Wet spinning of fibres. **04**
- (c) Differentiate between fat lime and Hydraulic lime. **04**

OR**Q. 4**

- (a) What are raw materials for the manufacture of lime? Describe its manufacturing Process. **06**

- (b) Distinguish between thermoplastic and thermosetting polymers or resins. **04**
- (c) Discuss types of polymerization. **04**

Q.5

- (a) Discuss the manufacture of acetic acid by fermentation process. **06**
- (b) Write short note on Geothermal Energy. **04**
- (c) Calculate the area, which receives 14.0 KW of solar energy in 2 sec. solar constant =1.4 KW/m². **04**

OR

Q.5

- (a) Discuss the Application of Biotechnology. **06**
- (b) Write short note on Nuclear Energy. **04**
- (c) Write short note on Environmental management. **04**

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