

GUJARAT TECHNOLOGICAL UNIVERSITY

B.E Sem-I/II Examination June-July 2011

Subject code: 110001

Subject Name: Chemistry

Date: 6/7/2011

Total Marks: 70

Time: 10:30 am to 1:00pm

Instructions:

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

- Q.1 (a)** Fill in the Blanks **07**
1. _____ can be used as a coagulant during the purification of potable water by municipalities.
 2. The purest form of commercial iron is _____ iron.
 3. Chemically the rusting of an iron can be noted as _____.
 4. Graphite and Molybdenum are used as a _____.
 5. _____ was the inventor of Portland cement.
 6. Polymerization of unsaturated dienes or trienes can be done better with the help of _____ catalyst.
 7. _____ gas was responsible for the deadly destruction of lives on 3rd December 1984 at Bhopal.
- (b)** Write a note on. **07**
1. Hot lime soda process for water treatment.
 2. Compressed Natural Gas (CNG)
- Q.2 (a)** Differentiate Renewable and Non-renewable source of energy. Discuss in detail the importance of solar energy. **07**
- (b)** Write a note on.
1. Natural & Artificial abrasive. **04**
 2. Acid- base Conductometric titrations. **03**
- OR**
- (b)** Write a short note on.
1. Effects of over use of natural resources. **04**
 2. pH & its measurement. **03**
- Q.3 (a)** What is Brackish water? Discuss electro dialysis and reverse osmosis method to desalinate the brackish water. **07**
- (b)** Explain:
1. Biofuel, the formation of Biogas. **04**
 2. The importance of organic coatings with examples. **03**
- OR**
- Q.3 (a)** Write the essential requirement of water consumed for drinking purpose along with a municipal process to avail the same. **07**
- (b)** Explain:
1. Manufacturing of Acetic acid by fermentation. **04**
 2. Mechanism of Lubrications. **03**
- Q.4 (a)** Discuss different analysis carried out to assess the quality of coal. Also calculate the gross and net calorific values of coal possessing the following composition: Carbon: 85%, Hydrogen: 8%, Sulphur: 1%, Nitrogen: 2%, Ash: 4%, Latent heat of steam: 587 cal/g. **07**

- (b) Discuss: 04
1. Melt and Wet spinning 03
2. Important properties of refractories. 03
- OR**
- Q.4** (a) Give the mechanism of dry and wet corrosion. 07
(b) Discuss: 04
1. Acid rain and Green house effect. 03
2. Alloys of steel. 03
- Q.5** (a) What are plastics? Write different constituents utilize in moulding the plastics. Explain Compression and Injection moulding. 07
(b) Explain: 04
1. Physical properties of Metals. 03
2. Vulcanization of rubber. 03
- OR**
- Q.5** (a) Discuss dry and wet process for manufacturing of Portland cement. 07
(b) Explain: 04
1. Pilling Bedworth rule and composition of petrol and kerosene. 03
2. Concrete and RCC. 03

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