

**GUJARAT TECHNOLOGICAL UNIVERSITY****BE - SEMESTER-I & II (OLD) EXAMINATION – SUMMER-2019****Subject Code: 110001****Date: 03/06/2019****Subject Name: Chemistry****Time: 10:30 AM TO 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) Distinguish between softening & demineralization of water. With the help of a neat schematic diagram, describe ion exchange process for purification of water. **07**  
(b) Explain pitting & waterline corrosion. **07**
- Q.2** (a) Describe in brief, the manufacture of metallurgical coke by Otto Hoffman's oven method. Also describe recovery of by-product & its advantage. **07**  
(b) Define the terms: annealing, normalizing, hardening & tempering. **07**
- Q.3** (a) Describe preparation, properties & use of nylon-6 & polyester. **07**  
(b) Write the structure of natural rubber & gutta percha. What are the deficiencies of natural rubber? **07**
- Q.4** (a) Discuss various steps involved in electroless plating. Write down advantage of electroless plating over electro plating. **07**  
(b) Write a short note on: Public awareness for environment. **07**
- Q.5** (a) What is hardness of water? How it is determined by EDTA method? **07**  
(b) Write a route on Bio Fuels & Bio Membrane. **07**
- Q.6** (a) Explain Injection moulding **07**  
(b) Answer in short: **07**  
1 Scales and Sludge.  
2 Rust.  
3 Principle of Chromatography.  
4 Different air pollutants.  
5 Advantage of CNG over Gasoline and Diesel.  
6 Ingredients of the Portland cement.  
7 Enzymes and its characteristic
- Q.7** (a) Define the following: **07**  
1 Composition of Gasoline or Petrol.  
2 Greases.  
3 Acid refractories.  
4 Melt spinning.  
5 Aerobic Fermentation.
- (b) Reason it: **07**  
1 Rusting of iron is quicker in saline water than in ordinary water.  
2 Neutrons preferred as a projectiles to carry out nuclear reaction.  
3 Radioactive wastes disposed off in salt mines.  
4 Chloramine is preferable to bleaching powder or chlorine for sterilization of drinking water

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