

Seat No.: \_\_\_\_\_

Enrolment No. \_\_\_\_\_

**GUJARAT TECHNOLOGICAL UNIVERSITY**  
**BE- SEMESTER 1<sup>st</sup> / 2<sup>nd</sup> EXAMINATION (NEW SYLLABUS) – SUMMER - 2017**

**Subject Code: 2110001**

**Date: 30/05/2017**

**Subject Name: Chemistry**

**Time: 2:30 PM to 05:00 PM**

**Total Marks: 70**

**Instructions:**

1. Question No. 1 is compulsory. Attempt any four out of remaining Six questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.

Q.1	Objective Question (MCQ)	MARKS
(a)	<ol style="list-style-type: none"><li>1. The number of coordinate bonds formed by EDTA with metal cation (a) 4 (b) 5 (c) 6 (d) 7</li><li>2. Galvanizing is the process of coating iron or steel sheets with a thin coat of (a) Cu (b) Zn (c) Pb (d) Brass</li><li>3. Sooty flame suggests presence of (a) Aromatic compound (b) Aliphatic (c) Alicyclic (d) All</li><li>4. Bhopal Gas tragedy occurred in the year (a) 1982 (b) 1984 (c) 1986 (d) 1988</li><li>5. Monomer of Polyester fibre is (a) Dimethyl terephthalate  (b) Diethylene terphthalate  (c) Ethylene glycol  (d) Diethylene glycol terphthalate</li><li>6. In fractional distillation of petroleum fuel oil is obtained at around (a) 110<sup>0</sup>c (b) 220<sup>0</sup>c (c) 330<sup>0</sup>c (d) 440<sup>0</sup>c</li><li>7. Which acid is present in lemon? (a). Malic acid (b) Citric acid (c). lactic acid (d). Tartaric acid</li></ol>	<b>07</b>
(b)	<ol style="list-style-type: none"><li>1. ----- is responsible for temporary hardness of water.</li><li>2. ----- is the chemical formula of rust.</li><li>3. ----- catalyst supports better polymerization of unsaturated dienes and trienes.</li><li>4. Dutch Metal contains Cu----% &amp; Zn -----%</li><li>5. ----ppm = -----mg/L.</li><li>6. _____calorimeter is used to determine calorific value of a liquid fuel.</li><li>7. Melting point of Benzoic acid.....<sup>0</sup>C</li></ol>	<b>07</b>

- Q.2** (a) Explain how enzymes are useful in industries? **03**  
(b) Discuss manufacture of ethyl alcohol from molasses by fermentation? **04**  
(c) Write a short note on Acid – Base Conductometric titration? **07**
- Q.3** (a) What is biogas? How it can be prepared in a village? **03**  
(b) Discuss the manufacturing of portland cement. Draw diagrams where ever required. **04**  
(c) Explain what changes in properties of raw rubber occur on its vulcanization. Draw diagrams to make clear the structural changes? **07**
- Q.4** (a) Write a short note on standards of cements. **03**  
(b) Define fibre? List various types of fibres and differentiate them on the basis of their physical properties. **04**  
(c) Discuss the classification, properties and application of abrasives. **07**
- Q.5** (a) What do you mean by alloy? Illustrate with suitable examples the purpose of alloy making. **03**  
(b) Write a short note on: **04**  
(1) Annealing (2) Hardening  
(c) What is corrosion? Differentiate chemical and electrochemical corrosion **07**
- Q.6** (a) Define fuel. What are the characteristics of good fuel? **03**  
(b) What do you mean by molecular formula of a compound? **04**  
The empirical formula of the dibasic organic acid is  $\text{CHO}_2$ . If its molecular weight is 90.2, what is its molecular formula.  
(c) Discuss Break point chlorination and its advantages. **07**
- Q.7** (a) Explain why in the deionization process water is first passed through the cation exchanger and then through the anion exchanger. **03**  
(b) How formation of scale and sludge in boilers can be prevented. **04**  
(c) Compare the salient features of zeolite process and lime-soda process used in water treatment. **07**

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