

**GUJARAT TECHNOLOGICAL UNIVERSITY**  
**BE- SEMESTER– 1st / 2nd (NEW) • EXAMINATION – SUMMER 2016**

Subject Code: 2110001

Date:31/05/2016

Subject Name: Chemistry

Time: 02:30 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.

- |            |   | Mark      |
|------------|---|-----------|
| <b>Q.1</b> | <b>Objective Question (MCQ)</b>   |           |
|            | <b>(a)</b>  | <b>07</b> |
|            | 1. A sample of water that does not give lather with soap solution is _____<br>(a) Soft water (b) Hard water (c) Acidic water (d) Alkaline water   |           |
|            | 2. The type of bonds in EDTA with metal cation is:<br>(a) Covalent (b) Ionic (c) Vanderwaals (d) Coordinate   |           |
|            | 3. The Total dissolved solids (TDS) can be reduced by the following method<br>(a) Distillation (b) Reverse osmosis (c) Ion exchange (d) All of the above  |           |
|            | 4. The ultimate source of water is<br><br>(a) Rivers and Lakes (b) Dew and Forest (c) Rain and Forest (d) Underground and surface   |           |
|            | 5. Bronze is an alloy of<br>(a) Cu and Nickel (b) Cu and iron (c) Cu and Tin (d) Cu and Aluminium   |           |
|            | 6. Corrosion of metals involves<br>(a) Physical reactions (b) Chemical reactions (c) Both (d) None  |           |
|            | 7. The solid fuels can be used in Internal combustion engine only after their<br>(a) Solidification (b) Liquefaction (c) Gasification (d) All of the above                                      |           |
|            | <b>(b)</b>  | <b>07</b> |
|            | 1. Nylon-6 is manufactured from<br>(a) Caprolactum<br>(b) Maleic anhydride and hexamethylene diamine<br>(c) Adipic acid and hexamethylene diamine<br>(d) sebasic acid and hexamethylene diamine |           |
|            | 2. _____ is the technique of separation and identification of chemical compounds.<br><br>(a) Chromatography (b) bibliography (c) Biography (d) None of these                                    |           |
|            | 3. Microorganisms used in biotechnology shall not<br>(a) grow rapidly in cheap culture medium<br>(b) shall be readily manipulated<br>(c) shall not be pathogenic<br>(d) all of these            |           |
|            | 4. Which acid is present in lemon<br>(a) Malic acid (b) Citric acid (c) Lactic Acid (d) Tartaric Acid   |           |
|            | 5. Final setting time of cement should not be more than<br>(a) 1 hour (b) 2 hours (c) 5 hour (d) 10 hours   |           |
|            | 6. Bio-Gas is<br>(a) Methane rich fuel (b) Ecofriendly and pollution free source<br>(c) Propane rich fuel (d) Both A & C  |           |
|            | 7. An aqueous solution with pH = 0 is<br>(a) Strongly acidic (b) Strongly basic (c) Neutral (d) Weakly acidic   |           |

<b>Q.2</b>	<b>(a)</b> What do understand by ‘Green Chemistry’?	<b>03</b>
	<b>(b)</b> Describe any four types of bonds with one example of each.	<b>04</b>
	<b>(c)</b> How can the knowledge of water technology help us in solving the problem of drinking water availability in our country.	<b>07</b>
<b>Q.3</b>	<b>(a)</b> Write a short note on “Break Point Chlorination”	<b>03</b>
	<b>(b)</b> Discuss cathodic protection and its significance.	<b>04</b>
	<b>(c)</b> List the need for alloying steel. Explain how different alloys of steel are useful in industries.	<b>07</b>
<b>Q.4</b>	<b>(a)</b> Explain the terms: Sacrificing anode and Corrosion inhibitors	<b>03</b>
	<b>(b)</b> What is R.U.L. test and its usefulness.	<b>04</b>
	<b>(c)</b> Illustrate the disadvantages of using coal as fuel. Compare LPG & CNG and state which is better and economical.	<b>07</b>
<b>Q.5</b>	<b>(a)</b> Which elements are called metal?	<b>03</b>
	<b>(b)</b> Define the terms: Specific gravity, Conductivity and Turbidity	<b>04</b>
	<b>(c)</b> Describe the Manufacturing process of Acetic acid by fermentation.	<b>07</b>
<b>Q.6</b>	<b>(a)</b> Brief on PCC and RCC	<b>03</b>
	<b>(b)</b> Discuss anionic polymerization with mechanism.	<b>04</b>
	<b>(c)</b> What is the composition of Portland Cement? Discuss the manufacturing procsettling and hardening of Portland cement.	<b>07</b>
<b>Q.7</b>	<b>(a)</b> Explain vulcanization of rubber.	<b>03</b>
	<b>(b)</b> Give application of polystyrene, PVC and polyethylene	<b>04</b>
	<b>(c)</b> What is monomers of Nylon 6, 6 and Bakelite. Differentiate between Thermoplastic and Thermosetting polymers	<b>07</b>

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