

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

Subject Code: 2110001
Subject Name: Chemistry
Time: 02:30 PM to 05:00 PM

Date:31/05/2016
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) | Mark |
|------------|--|-------------|
| | (a) | 07 |
| | 1. A sample of water that does not give lather with soap solution is _____
(a) Soft water (b) Hard water (c) Acidic water (d) Alkaline water | |
| | 2. The type of bonds in EDTA with metal cation is:
(a) Covalent (b) Ionic (c) Vanderwaals (d) Coordinate | |
| | 3. The Total dissolved solids (TDS) can be reduced by the following method
(a) Distillation (b) Reverse osmosis (c) Ion exchange (d) All of the above | |
| | 4. The ultimate source of water is

(a) Rivers and Lakes (b) Dew and Forest (c) Rain and Forest (d) Underground and surface | |
| | 5. Bronze is an alloy of
(a) Cu and Nickel (b) Cu and iron (c) Cu and Tin (d) Cu and Aluminium | |
| | 6. Corrosion of metals involves
(a) Physical reactions (b) Chemical reactions (c) Both (d) None | |
| | 7. The solid fuels can be used in Internal combustion engine only after their
(a) Solidification (b) Liquefaction (c) Gasification (d) All of the above | |
| | (b) | 07 |
| | 1. Nylon-6 is manufactured from
(a) Caprolactum
(b) Maleic anhydride and hexamethylene diamine
(c) Adipic acid and hexamethylene diamine
(d) sebasic acid and hexamethylene diamine | |
| | 2. _____ is the technique of separation and identification of chemical compounds.

(a) Chromatography (b) bibliography (c) Biography (d) None of these | |
| | 3. Microorganisms used in biotechnology shall not
(a) grow rapidly in cheap culture medium
(b) shall be readily manipulated
(c) shall not be pathogenic
(d) all of these | |
| | 4. Which acid is present in lemon
(a) Malic acid (b) Citric acid (c) Lactic Acid (d) Tartaric Acid | |
| | 5. Final setting time of cement should not be more than
(a) 1 hour (b) 2 hours (c) 5 hour (d) 10 hours | |
| | 6. Bio-Gas is
(a) Methane rich fuel (b) Ecofriendly and pollution free source
(c) Propane rich fuel (d) Both A & C | |
| | 7. An aqueous solution with pH = 0 is
(a) Strongly acidic (b) Strongly basic (c) Neutral (d) Weakly acidic | |

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