

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

**GUJARAT TECHNOLOGICAL UNIVERSITY****BE - SEMESTER– I & II (NEW) EXAMINATION – WINTER 2019****Subject Code: 2110001****Date: 02/01/2020****Subject Name: Chemistry****Time: 10:30 AM TO 01:00 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.

<b>Q.1</b>	<b>Objective Question (MCQ)</b>	<b>Mark</b>
(a)	<ol style="list-style-type: none"><li>1. Alloy bronze is consist of (a) Cu and Ni (b) Cu and Pb (c) Cu and Sn (d) Cu and Al</li><li>2. Molecular structure of SF<sub>6</sub> (a) linear (b) tetrahedral (c) hexagonal (d) octahedral</li><li>3. Number of bonding pairs of electrons in water H<sub>2</sub>O is (a) 1 (b) 2 (c) 3 (d) 4</li><li>4. Bio-Gas contains mainly..... (a) CH<sub>4</sub> (b) CH<sub>3</sub>CH<sub>3</sub> (c) CH<sub>3</sub>CH<sub>2</sub>CH<sub>3</sub> (d) none of these</li><li>5. Which one of the following is condensation polymer (a) Nylone-66 (b) PVC (c) PTFE (d) all of these</li><li>6. Good fuel might possess..... (a) Very low ignition temperature (b) High moisture (c) High calorific value (d) All of these</li><li>7. What is(are) true for Zeolites? (a) they are aluminosilicates (b) they are microporous compounds (c) they are used to remove Ca and Mg from water (d) all of these</li></ol>	<b>07</b>
(b)	<ol style="list-style-type: none"><li>1. What is(are) true about plaster of paris? (a) it is calcium sulphate hemihydrate (b) it is prepared by heating CuSO<sub>4</sub>·2H<sub>2</sub>O (c) both are correct (d) both are false</li><li>2. 500 mg/L is = ____ °Clerk (a) 07.00 (b) 35.00 (c) 05.00 (d) None of these</li><li>3. The unit of turbidity is (a) NTU (b) FTU (c) JTU (d) all</li><li>4. Overhead cables are insulated from pylons through (a) Thermocol (b) Rubber (c) PVC (d) Ceramic</li><li>5. Which is correct for Bakelite polymer (a) it is made from phenol and formaldehyde (b) it is made via Novolac intermediate (c) both are correct (d) both are false</li><li>6. Proximate analysis measures (a) moisture (b) ash (c) volatile matter (d) all of these</li><li>7. For fermentation which is more suitable? (a) an anaerobic process of converting sugars into alcohols or acids and carbon dioxide (b) an aerobic process of converting sugars into alcohols or acids and carbon dioxide (c) an anaerobic process of converting sugars into alcohols or acids and oxygen (d) an aerobic process of converting sugars into alcohols or acids and oxygen</li></ol>	<b>07</b>

- Q.2** (a) Define and explain the term: Break Point Chlorination. **03**  
(b) Discuss the processes: setting and hardening of cement. **04**  
(c) What is hardness of water? Enlist the types of hardness in water and explain cold lime soda process for the treatment of water. **07**
- Q.3** (a) Draw the structures of the compounds: i) N,N-diethyleaniline **03**  
ii) Monomers of SBR iii) Aminocaproic acid  
(b) What are the abrasives? Write their important uses. **04**  
(c) Explain manufacturing of Portland Cement. **07**
- Q.4** (a) Define any three types of bonds with one example of each. **03**  
(b) Describe the process for the production of steel from cast iron. **04**  
(c) Why does natural rubber need vulcanization? Discuss the process of vulcanization. **07**
- Q.5** (a) Define Specific gravity and give its significance in chemical analysis. **03**  
(b) Define enzyme and enlist its application in industries. **04**  
(c) Explain the terms 'calorific value' and 'fuel' and explain the ultimate analysis of coal. **07**
- Q.6** (a) Describe the process of melt spinning of fibers. **03**  
(b) Discuss cationic polymerization with mechanism. **04**  
(c) Explain about Non-Ferrous alloys and its industrial applications. **07**
- Q.7** (a) Define the terms : Inhibitors, Degree of Polymerization and Annealing **03**  
(b) Differentiate chemical and electrochemical corrosion. **04**  
(c) What is green chemistry? Enlist the principles of green chemistry and explain any two of them. **07**

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