

GUJARAT TECHNOLOGICAL UNIVERSITY**BE- SEMESTER-I & II (NEW) EXAMINATION – WINTER 2020****Subject Code:3110001****Date:17/03/2021****Subject Name:Chemistry****Time:10:30 AM TO 12:30 PM****Total Marks:56****Instructions:**

1. Attempt any FOUR questions out of EIGHT questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.

	Marks
Q.1 (a) Define Hardness. Explain the types of Hardness.	03
(b) What do you understand by priming and foaming problems in boiler?	04
(c) Discuss the ion exchange process for water softening.	07
Q.2 (a) What are the characteristic of good fuels?	03
(b) Discuss the proximate analysis of coal.	04
(c) Give the composition of biogas. With the help of a diagram explain a biogas plant.	07
Q.3 (a) Discuss, with example the types of polymerization.	03
(b) Explain with example condensation polymerization.	04
(c) Discuss linear and cross-linked polymers.	07
Q.4 (a) Write short notes on Brittleness and Weld ability	03
(b) What are alloys? Discuss the necessity of making alloys.	04
(c) What is corrosion? Discuss the mechanism of electrochemical corrosion.	07
Q.5 (a) What is nanomaterial? State its sources and properties.	03
(b) Write the application of nanomaterial in catalysis and medicine.	04
(c) Explain the refining process of petroleum by fractional distillation.	07
Q.6 (a) Write ,in brief, applications of biotechnology.	03
(b) What are enzymes? Mention their general characteristics.	04
(c) Discuss the manufacture of ethyl alcohol by fermentation process with neat flow diagram.	07
Q.7 (a) Give an outline of fermentation process.	03
(b) Define PH and Conductance	04
(c) What is bio membrane? Write the activities of plasma membrane.	07
Q.8 (a) Write the reaction involved for the production of ethanol by fermentation of starch.	03
(b) What is spectroscopy? Write the application of UV-Visible spectroscopy.	04
(c) Write a notes on plant and animal biotechnology.	07
