

GUJARAT TECHNOLOGICAL UNIVERSITY**BE - SEMESTER-IV(NEW) – EXAMINATION – SUMMER 2019****Subject Code:2141302****Date:17/05/2019****Subject Name: Environmental Sciences II****Time:02:30 PM TO 05:00 PM****Total Marks: 70****Instructions:**

1. Attempt all questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.

	MARKS
Q.1 (a) What is osmosis? Explain the process and application.	03
(b) Enlist different types of acidity present in wastewater. Explain their significance.	04
(c) Differentiate between BOD and COD.	07
Q.2 (a) Highlight and explain about the sources of sulphate in water and wastewater.	03
(b) Explain the procedure of determination of oil and grease present in wastewater.	04
(c) Explain the principle of Solvent Extraction.	07
OR	
(c) Explain Aliphatic and Aromatic compounds with examples.	07
Q.3 (a) Differentiate between fats and wax.	03
(b) Give the difference between organic compounds and inorganic compounds.	04
(c) Give classification of alcohols and explain with example.	07
OR	
Q.3 (a) How ethers are formed? Highlight its application.	03
(b) Find out COD value of : 1500 mg/L of Glucose.	04
(c) Write a short note on Binary mixtures.	07
Q.4 (a) Write a brief note on cyclic compounds with examples.	03
(b) List out the characteristics of pesticides.	04
(c) Explain general properties of Colloids.	07
OR	
Q.4 (a) Enlist different chemical reactions by which saturated hydrocarbons are formed. Explain any one with example.	03
(b) Explain Brownian movement and Tyndall effect with figure.	04
(c) Explain procedure of COD determination.	07
Q.5 (a) What are volatile acid? Discuss significance of volatile acids in anaerobic treatment.	03
(b) Explain about the significance of nitrogen species for aquatic life and aquatic bodies.	04
(c) Explain modified Winkler method for DO determination.	07
OR	
Q.5 (a) What is the significance of Dissolved Oxygen in water bodies and in wastewater treatment plant.	03
(b) Write a brief note on Amphoteric hydroxides.	04
(c) Illustrate the phenomena of common ion effect with example.	07
