

Seat No.: _____

Enrolment No. _____

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER-VI(NEW) EXAMINATION – WINTER 2022

Subject Code:3160611

Date:14-12-2022

Subject Name:Environmental Engineering

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.
4. Simple and non-programmable scientific calculators are allowed.

		MARKS
Q.1	(a) Find out how much acidic is sample pH 3.0 compared to pH 6.0.	03
	(b) Define BOD. Give the significance of BOD test for wastewater.	04
	(c) Draw a neat flow chart of a Domestic Wastewater Treatment Plant. Enlist the function of each unit.	07
Q.2	(a) What do you understand by sedimentation with coagulation?	03
	(b) Enlist different chemical characteristics of water and discuss about acidity with their environmental significance.	04
	(c) What are the different types of pipes used for water supply? Discuss cast iron pipes and concrete pipes in detail.	07
OR		
(c)	What is an intake structure? Sketch and explain construction and working of a river intake.	07
Q.3	(a) Differentiate between temporary hardness and permanent hardness.	03
	(b) Explain break point chlorination.	04
	(c) Sketch and explain construction and working of trickling filter.	07
OR		
Q.3	(a) Explain aerobic decomposition and anaerobic decomposition of sewage.	03
	(b) What do you mean by self-purification? Explain with the sketch the oxygen sag curve.	04
	(c) Give comparison between slow sand filter and rapid sand filter.	07
Q.4	(a) Define: Garbage, Rubbish and Sewage.	03
	(b) Describe activated sludge process with sketch.	04
	(c) Write a short note on the layout of distribution systems which are commonly used in India.	07
OR		
Q.4	(a) Draw a house drainage plan for a 3BHK detached bungalow	03
	(b) Describe trickling filter with sketch.	04
	(c) Explain 1 st stage BOD and derive its formula with usual notations $L_t = L_0 [1 - (10)^{-Kt}]$	07
Q.5	(a) Write a short note on composting.	03
	(b) Explain design procedure of septic tank.	04
	(c) Discuss different methods of sewage disposal.	07
OR		
Q.5	(a) What is noise pollution? State the sources of it.	03
	(b) Explain the effects of air pollution on men, material and animals.	04

(c) What is sanitary land filling? Describe the different factors to be considered for the site selection of sanitary land filling. **07**
