

GUJARAT TECHNOLOGICAL UNIVERSITY

BE- SEMESTER- V EXAMINATION – SUMMER 2026

Subject Code:3151712

Date:21-05-2026

Subject Name:Environmental Instrumentation

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) Explain the necessity of instrumentation and control for environment.	03
	(b) With an example explain any one sensor used for monitoring environment condition.	04
	(c) List out different factor that effect on settling of particles & explain each in detail.	07
Q.2	(a) List out different water quality parameters.	03
	(b) What are the sources of water? What are the effects of quality of water?	04
	(c) Explain waste water measurement techniques.	07
	OR	
	(c) Explain Requirement of water treatment facilities.	07
Q.3	(a) Write down about sedimentation.	03
	(b) List and give a detailed classification of raw water sources in nature.	04
	(c) Draw block diagram of waste water treatment plant. Explain each process in detail.	07
	OR	
Q.3	(a) Explain any one sludge removal technique in detail.	03
	(b) How does temperature affects on coagulation? Explain in brief	04
	(c) Describe the effect of temperature on sedimentation. Also give definition of viscosity and write causes of change of it in water.	07
Q.4	(a) List various techniques through which CO ₂ analysis can be done.	03
	(b) Enlist Air sampling methods & equipments.	04
	(c) Describe SO ₂ control method in thermal power plant with necessary diagram.	07
	OR	
Q.4	(a) What is rain water harvesting? Write advantages and applications it.	03
	(b) Explain the measurement of ambient air quality.	04
	(c) Explain weirs & flumes in detail.	07
Q.5	(a) How the Quality of storage water can be assured?	03
	(b) List out different gas flow measurement techniques.	04
	(c) Explain Hot-Wire anemometers and pitot tubes for air flow measurement.	07
	OR	
Q.5	(a) Explain thermal oxidizers in detail.	03
	(b) Explain any one analytical instrument used to measure air pollution.	04
	(c) How air pollution from thermal power plant takes place? Explain how we can control this.	07
