

Seat No.: _____

Enrolment No. _____

GUJARAT TECHNOLOGICAL UNIVERSITY**B.E. Sem-III Remedial Examination March 2010****Subject code: 131301****Subject Name: Environmental Science-I****Date: 09 / 03 / 2010****Time: 03.00 pm – 05.30 pm****Total Marks: 70****Instructions:**

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

Q.1	(a)	Enumerate different glassware used in titration process and list out their available capacities.	07
	(b)	Differentiate molar solution with molal solution and find out molar concentration of 20 g/l of NaOH solution.	07
Q.2	(a)	Define atomic weight and equivalent weight and calculate gram molecular weight of CaCO_3 , Na_2CO_3 and CH_4 .	07
	(b)	Explain the general gas law and find the volume required to hold 500 kg of methane gas at 25°C and 3 atm pressure.	07
		OR	
	(b)	Explain oxidation and reduction reactions with examples.	07
Q.3	(a)	What is turbidity? Explain the working principle of Nephelometric Turbidimeter.	07
	(b)	Define (1) Standard solution and Normal solution (2) Primary standards and secondary standards.	07
		OR	
Q.3	(a)	Differentiate NTU and JTU and describe functioning of Jackson Turbidimeter with sketch.	07
	(b)	What is standardization? How the solution of N/1 sodium hydroxide is standardized.	07
Q.4	(a)	What is pH? How is it measured? Write the equations for finding the ionization coefficient of water.	07
	(b)	Define the solubility product? Discuss its significance in the field of environmental chemistry.	07
		OR	
Q.4	(a)	What is pH scale? Describe the procedure of calibration of pH meter.	07
	(b)	What do you mean by distilled water? How is it prepared? Can you consider rain water as distilled water?	07
Q.5	(a)	Define conductivity and explain the principle of its measurement with Wheatstone bridge circuit.	07
	(b)	Differentiate chemical and microbiological analysis.	07
		OR	
Q.5	(a)	What is specific conductance? Describe the procedure of calibration of conductivity cell.	07
	(b)	How is stock solution of N/1 sulfuric acid is prepared? Give calculations for preparation of N/50 solution from it.	07
