Seat No.: _____ *Enrolment No._____*

GUJARAT TECHNOLOGICAL UNIVERSITY

BE SEM-III Examination May 2012

Subject code: 131301

Subject Name: Environmental Science – I

Date: 11/05/2012 **Time: 02.30 pm – 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.**

Q.1	**(a)**	Explain the Dalton's law in detail.	**07**
	(b)	Explain application of Henry's law in Environmental Engineering Field.	**07**
Q.2	**(a)**	Write a short note on familiarization of laboratory.	**07**
	(b)	Write a short note on standard methods used for analytical work.	**07**
		OR	
	(b)	Give the difference between volumetric analysis and gravimetric analysis.	**07**
Q.3	**(a)**	Give the difference between primary standards and secondary standards with examples.	**07**
	(b)	Write a short note on Nephelo Turbidity meter.	**07**
		OR	
Q.3	**(a)**	Give the application of pH meter in environmental engineering field.	**07**
	(b)	Determine the pH of (i) 0.02 N HCl, (ii) 0.02 N H_2SO_4	**07**
Q.4	**(a)**	Explain Mohr's method for determination of chloride.	**07**
	(b)	Why must the sample pH be neither high nor low in the Mohr Method for chlorides and why a blank correction must be applied in Mohr method.	**07**
		OR	
Q.4	**(a)**	Give the causes and sources of hardness	**07**
	(b)	Write a short note on carbonate hardness and non carbonate Hardness.	**07**
Q.5	**(a)**	Calculate the amount of powder required in grams /solution required in ml for preparation of following solutions: (i) 1000ml 0.25N $KMnO_4$ (ii) 1000ml 0.01M HCl (iii) 1000ml 0.282N$AgNO_3$ (iv) 1000ml 0.25N FAS (v) 1000ml 0.02N NaCl (vi) 1000ml 0.02N $K_2Cr_2O_7$ (vii) 1000ml 0.01N $NH_4(OH)$	**14**
		OR	
Q.5	**(a)**	Write the uses of following instruments and capacity of measurement; (i) BOD Incubator (ii) Hot Air Oven (iii) Monopan Balance (iv) Conductivity Meter (v) Spectrophotometer (vi) COD Apparatus (vii) High Volume Air Sampler	**14**