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GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER-III EXAMINATION – WINTER 2015

Subject Code:131301 Date: 18/12/2015 Subject Name: ENVIRONMENTAL SCIENCE- I Time: 2:30pm to 5:00pm Total Marks: 70 **Instructions:** 1. Attempt all questions. 2. Make suitable assumptions wherever necessary. 3. Figures to the right indicate full marks. 07 0.1 (a) Explain the generalized gas law and graham's law. (b) What are the sources of turbidity in water? Give the difference between 07 Nephelometric and Visual method for Turbidity measurement. (a) Calculate the volume of oxygen required at 25°C and 0.25 atm pressure for the 0.2 07 combustion of 80gm of methane (b) What is temporary and permanent hardness? What is the method for the **07** measurement of total hardness. OR **(b)** Calculate the pH of the following 07 (i) 0.01M HCL (ii) 0.02N H₂SO₄ 0.3 07 Write a note on the Sampling procedures and its types. **(b)** What do you mean by distilled and demineralised water? How is it prepared? **07** Can you consider rain water as distilled water? (a) Write the uses of the following instruments and glasswares 07 0.3 (I) COD Apparatus (ii) High Volume Sampler (iii) Burette (iv)Pipette (v)Hot air oven **(b)** Give the difference between volumetric and gravimetric analysis 07 0.4 What do you mean by primary standards? Give examples. Write the procedure 07 for the standardization of 0.25 M FAS (b) Explain the argentometric method for the analysis of chloride. What is the 07 importance of pH in this method? OR What is alkalinity? What are its types and sources **Q.4** 07 (b) What is TSS, TDS & TS? Write the procedure for the measurement of TDS & 07 TS. **07** (a) Enlist all the methods involved under the category of Optical methods of **Q.5** Analysis and explain in detail any two methods. (b) Define molarity, normality and molality. How much volume is required to 07 prepare N/50 H₂SO₄ from N/10 H₂SO₄ in 250 ml volumetric flask (a) Write a short note on standard methods of analysis of waste & wastewater Q.5 07 (b) Write the environmental significance of the measurement of pH, hardness and **07** acidity.
