

**GUJARAT TECHNOLOGICAL UNIVERSITY****BE - SEMESTER-III (OLD) EXAMINATION – WINTER 2017****Subject Code:131301****Date:14/11/2017****Subject Name: Environmental Science-1****Time: 10:30 AM to 01:00 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)** What do you mean by primary standard? Give examples. Write the characteristics of primary standard. **07**

**(b)** Explain the generalized gas law **07**

**Q.2 (a)** Give the difference between distilled water & demineralised water. **07**

**(b)** What do you mean by hardness. What are its types. Explain the zeolite method for the removal of permanent hardness. **07**

**OR**

**(b)** What are the two types of electrodes in the pH meter? Explain the working of pHmeter. **07**

**Q.3 (a)** Explain the ionization of weak acids. **07**

**(b)** Write a short note on the standard methods of analysis of water and wastewater. **07**

**OR**

**Q.3 (a)** How will you differentiate chemical & microbiological analysis. **07**

**(b)** The solubility product of AgBr at a certain temperature is  $2.5 \times 10^{-13}$ . Find out the solubility of AgBr in g/L at this temperature. **07**

**Q.4 (a)** Explain the instrumental method for the analysis of turbidity with the help of diagram. **07**

**(b)** Name the different methods used for the analysis of chloride. Explain any one of them. **07**

**OR**

**Q.4 (a)** Calculate volume of oxygen required at 25°C and 0.5 atm. Pressure for combustion of 40gm of methane **07**

- (b) Differentiate between primary & secondary solutions. Write the procedure for the standardization of 0.25N FAS. **07**

**Q.5 (a)** Define solubility product. What is its environmental significance. **07**

(b) Write the uses of the following **07**

1. BOD bottle	2. Pipette	3. Measuring Cylinder	4. Hot air oven
5. Stack Monitoring kit	6. Jar test apparatus	7. Condenser	

**OR**

**Q.5 (a)** Write the importance of calibration of glassware and instruments. Write the basic procedure for the washing of glasswares **07**

(b) What is alkalinity? What are its types? What is the procedure for the measurement of two types of alkalinity **07**

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