Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

M.E. SEMESTER I (old course)–EXAMINATION (Remedial) – WINTER 2015

Subject code: 711702 **Date: 09/12/2015**

Subject Name: Environmental Chemistry

Time: 10:30 AM to 1:00 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)** Short Answer Question **07**

1. What do you mean by Polarity?

2. Explain First law of Thermodynamics.

3. Environmental issues on using insecticides.

4. Which suitable composition does Organic molecules degrades?

5. Which method is most suitable to determine the percentage composition of any organic and inorganic molecules?

6. Penetration of organic and inorganic content in soil degrades what?

7. Due to high persistence and high potential for creating harm to human and environment which particular pesticides are banned?

(b) Explain in brief the importance of **07**

(1) Ammonical Nitrogen (2) Chemical Oxygen Demand (3) Determination of Alkanity.

Q.2 **(a)** Write in brief the sources and properties of organic chemical compounds. **07**

(b) (1) Reverse Osmosis. **07**

(2) Electrodialysis.

OR

(b) Enlist different types of Aldehydes, Ketones and Esters with their sources and utility and explain their course of degradation chemically as well as biologically. **07**

Q.3 **(a)** Determine the nature and composition of soil. Discuss the different sources through which soil pollutes. Discuss solution to the same. **07**

(b) Discuss modern agro technology and discuss in detail eco farming & technology utilize in same. **07**

OR

Q.3 **(a)** Discuss thermodynamic and chemical equilibrium relationship. **07**

(b) Discuss Gas chromatographic method to establish the pollutant content in the sample. **07**

Q.4 **(a)** What use is made of the BOD and COD test in water pollution control? List five requirements that must be compiled with in order to obtain reliable BOD & COD data. **07**

(b) Brief in detail what is pH. Increase in same leads to several issues, discuss. Write in brief pX concept and Lograthmic concentration diagram. **07**

OR

Q.4 **(a)** Discuss in brief about pesticides. Explain the pros and cons of its utility and solution related to its hazardous activity. **07**

(b) Explain the standard methods of determination of solids: Total, Dissolved, and Settle able. **07**

Q.5 **(a)** Explain air quality principles and its measurements. **07**

(b) Write a note: Macro and micro plant nutrient. **07**

OR

Q.5	**(a)**	Explain in brief the principle of: (1) Conductance (2) Gravimetric (3) Spectrophotometre.	**07**
	(b)	Explain in brief any suitable method to determine the presence of Nitrates and Nitrites in surface or ground water.	**07**