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Reg. No. : .....

Name : .....

**First Semester M.Tech. Degree Examination, June 2009**  
**Branch : Civil (2008 Scheme)**  
**Environmental Engineering**  
**CEC 1001 : ENVIRONMENTAL CHEMISTRY**

Time: 3 Hours

Max. Marks: 100

*Instruction : Answer all Parts.*

PART – I

Answer **any ten** :

- I. a) State Dalton's law of partial pressures.
  - b) What is common ion effect ?
  - c) What is the principle behind solvent extraction ?
  - d) What is stability constant ?
  - e) What is Tyndall Effect ?
  - f) Define sol.
  - g) What is an isotope ? Give example.
  - h) What fraction of an initial amount of  $^{14}\text{C}$  left after one year ?
    - i) What is an enzyme ?
    - j) A sample of sludge has a total solids content of 3.42 percent. If the sludge specific gravity is 1.06, what is the total solids content in gm/litre ?
    - k) Differentiate aliphatic and aromatic compounds.
    - l) What are detergents ? Differentiate detergents and soaps.
    - m) What are the different types of hardness ?
- (1½×10=15 Marks )

P.T.O.

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PART – II

Answer **any five** questions :

- II. a) What are the different types of adsorption ? Differentiate each. **17**
- b) Explain the importance of chemistry for Sanitary Engineers. **17**
- c) What is zeta potential ? Explain how it can be used to assess the effectiveness of various coagulant strategies. **17**
- d) Differentiate alpha, beta and gamma radiations. **17**
- e) Discuss Van't Hoff's rule in biochemical reactions with example. **17**
- f) What are the precautions to be taken during the disposal of hazardous chemicals ? **17**
- g) Briefly describe the following with chemical equations :
- 1) Determination of hardness in water. **9**
- 2) Principle of determination of D.O. **8**
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