



B.E. / B.Tech. (Full Time) DEGREE END SEMESTER EXAMINATIONS, APRIL/MAY 2012

CIVIL ENGINEERING BRANCH

SIXTH SEMESTER – (REGULATIONS 2004)

CE 384 – ENVIRONMENTAL ENGINEERING II

Time: 3 hours

Total Marks: 100

Instructions

- (i) Part A carries a maximum of 20 marks and Part B carries a maximum of 80 marks
- (ii) All questions in Part A carries 2 marks each and all questions in Part B carries 16 marks each
- (iii) Make suitable assumptions wherever necessary and state them clearly.

PART A (10X2 = 20 Marks)

- 1. What is the significance of velocity gradient in flash mixer and flocculator?
- 2. Explain the mechanisms of disinfection process.
- 3. State the objectives of primary treatment of sewage.
- 4. Give the design criteria for grit chamber.
- 5. Distinguish between unit operations and unit processes.
- 6. What is the significance of F/M ratio in extended aeration process?
- 7. What are the factors influencing reaeration in self purification process?
- 8. Enumerate various methods of sewage disposal.
- 9. What are the objectives of sludge treatment?
- 10. Enumerate various methods of sludge dewatering.

PART B (5X16 = 80 Marks)

- 11. Draw the typical process flow diagram for a conventional ASP based sewage treatment plant and write the objectives of each unit.
 - 12.a)i) Discuss the role of wash water troughs in rapid sand filter. How do you design them? (6)
 - ii) Describe various methods of removing excess iron and manganese from ground water. (10)
- (OR)
- b)i) Design a clari-flocculator unit for a WTP to treat 50 ML/d of water. Assume suitable design criteria as applicable.