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Name : .....

Reg. No: .....

**EIGHTH SEMESTER B.TECH (ENGINEERING) DEGREE EXAMINATION,  
APRIL 2013**

**CE 09 801 : ENVIRONMENTAL ENGINEERING II**

**Duration : Three Hours**

**Maximum : 70 Marks**

**PART A**

*Answer all questions*

1. Explain the significance of term "time of concentration".
  2. Name any two physical and chemical characteristics of wastewater.
  3. Bring out the vital difference between trickling filter and activated sludge process.
  4. What is sludge elutriation?
  5. Name any four gaseous pollutants and their source.
- (5 × 2 Marks = 10 Marks)

**PART B**

*Answer any four questions*

6. With the help of neat sketches explain different systems of piping.
  7. Explain the different systems of sewerage. Highlight the significance of each one.
  8. Using a flow diagram explain different treatment steps usually adopted in a typical wastewater treatment unit.
  9. Explain the response of streams to the discharge of wastewater into them.
  10. Bring out the principles involved in the design of sedimentation tanks.
  11. Briefly explain the composting process used in the disposal of solid wastes.
- (4 × 5 Marks = 20 Marks)

**PART C**

12. (A) Prepare a short note on (i) Manhole (ii) Grease trap (iii) Inverted siphon  
Or

(B) What are the important factors to be considered in the selection of material for sewers? Define self-cleaning velocity. How are sewers designed to ensure self-cleaning velocity during the flow?

13. (A) What is the significant difference in the characteristics of industrial wastewater and domestic wastewater? How does this factor influence the choice of the treatment units?  
Or

(B) What are oxidation ponds? When are they preferred most in the wastewater treatment process? Bring out the steps involved in their design. Also, draw a neat sketch of the same.

14. (A) Explain the steps involved in the treatment of sludge before its disposal. Also, describe various methods of sludge disposal.  
Or

(B) Design a septic tank for a small apartment to house four families. Average size of the family shall be taken as 4 members. The space availability and soil conditions shall be suitably assumed. Also, draw the plan and sectional elevation of the designed tank.

15. (A) Explain the steps involved in the solid waste management programme in an urban area.  
Or

(B) Describe any three air pollution control devices usually installed to control the industrial emissions.

(4 × 10 Marks = 40 Marks)

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