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(Pages : 2)

Name.....

Reg. No.....

**EIGHTH SEMESTER B.TECH. (ENGINEERING) DEGREE EXAMINATION
DECEMBER 2010**

CE 04 803—ENVIRONMENTAL ENGINEERING—II

(2004 Admissions)

Time : Three Hours

Maximum : 100 Marks

Answer all questions.

1. (a) Explain the plumbing systems of house drainage with neat sketch.
- (b) Differentiate clearly between an inlet and a catch basin.
- (c) What are the major types and sources of grit in municipal wastewater ? Describe treatment methods used to remove grit.
- (d) Explain the mechanism of purification in facultative ponds.
- (e) Explain the various stages of anaerobic sludge digestion in detail with neat flow chart.
- (f) Write a note on sludge conditioning. Why elutriation is necessary before chemical conditioning ?
- (g) Explain the classification of composting technologies and discuss briefly the basic steps involved in the composting practice.
- (h) Explain the sources, characteristics and health impacts of the following air pollutants, (i) carbon monoxide (ii) particulate matter.

(8 × 5 = 40 marks)

2. (a) Describe in brief various types of water carriage system, stating advantages and disadvantages of each system.

Or

- (b) Write a note on (i) testing of sewers (ii) ventilation of sewers.
3. (a) State and describe *four* important tests that may be carried out to know the characteristics of sanitary sewage.

Or

- (b) Explain the basic concept of the activated sludge process and indicate the advantages and disadvantages of the two major kinds of activated sludge reactors.

Turn over

4. (a) Why dewatering of sludge is necessary? Explain the methods of dewatering the sludge on sludge drying beds with neat sketch.

Or

- (b) Discuss the methods of disposal of septic tank effluent in detail with neat sketch.
5. (a) Explain the various phases of Municipal Solid Waste decomposition in a closed landfill cell. How do leachate quality and gases differs between each phase?

Or

- (b) Briefly explain the *four* primary types of treatment processes available for control of gases.

(4 × 15 = 60 marks)