

EIGHTH SEMESTER B.TECH. (ENGINEERING) DEGREE
EXAMINATION, DECEMBER 2012

PTCE/CE 04 803—ENVIRONMENTAL ENGINEERING—II

(2004 admissions)

Time : Three Hours

Maximum : 100 Marks

Answer all questions.

1. (a) Explain the term time of concentration.
(b) What do you understand by an inverted siphon ? When do you construct it ?
(c) Define BOD. What are the limitations of BOD test ?
(d) Differentiate high rate and low rate trickling filter.
(e) What are the advantages and disadvantages of septic tank ?
(f) Write short note on the use of sewage effluent for irrigation.
(g) Explain the effect of air-pollutants on human health.
(h) Write short note on incineration of refuse.

(8 × 5 = 40 marks)

2. (a) Define dry weather flow. Explain the factors affecting dry weather flow.

Or

- (b) What are the various types of storm water regulators used in a sewerage system ? Explain briefly the working of each of these with sketches.

3. (a) Determine the size of a high rate trickling filter for the following data :

Sewage flow = 5 Mld

Recirculation ratio = 1.5

BOD of raw sewage = 300 mg/l.

BOD removed in primary clarifier = 30 %

Find effluent BOD desired = 50 mg/l.

Calculate also the rise of the standard rate trickling filter to accomplish the above requirement.

Or

- (b) Explain with a neat sketch the construction and working of an oxidation pond.

4. (a) Explain the various methods of final disposal of sludge.

Or

- (b) Design a septic tank for the following data :

Number of persons = 250

Sewage/capita/day = 125 litres

De-sludging period = 1 year.

Assume any other data, if needed.

5. (a) Explain the important devices which are used to control particulate matter and emission of gaseous pollutants in industries.

Or

- (b) Explain the disposal of solid waste by sanitary land filling. What are the advantages and disadvantages of sanitary land filling ?

(4 × 15 = 60 marks)