Reg. No. : ....

Name : ....

Eighth Semester B.Tech. Degree Examination, November 2015
(2008 Scheme)
08.803 : ENVIRONMENTAL ENGINEERING – II (C)

Time : 3 Hours   Max. Marks : 100

*Instruction : Assume **any** suitable data **if** necessary.*

PART – A

Answer **all** questions.

I. a) What are the different sources of waste water ?

b) Explain the Streeter-Phelps equation and what is its application.

c) Sketch the conventional sequence of various unit operations in a municipal sewage treatment plant.

d) Mention the operational troubles in a standard rate trickling filter and their remedies.

e) What are the factors affecting digestion of sludge ?

f) What are the principles of house drainage ?

g) Write a note on aerated lagoon.

h) How is SVI determined ?   **(8×5=40 Marks)**

PART – B
Module – I

II. a) Explain in detail the different systems of sewerage.   **10**

b) Explain with a neat sketch the working of an inverted siphon.   **10**

OR

P.T.O.

c) A city discharges 100 cumecs of sewage into a river which is fully saturated with oxygen and flowing at the rate of 1500 cumecs during its lean days with a velocity of 0.1 m/sec. The 5 days BOD of sewage at the given temperature is 280 mg/l. Find when and where the critical DO deficit will occur and what is its amount. Assume coefficient of purification of the stream as 4.0 and coefficient of deoxygenation as 0.1/day saturation. DO is taken as 9.2 ppm. **20**

Module – II

III. a) Design a standard rate trickling filter plant to treat 5 million litres of sewage per day having a 5 day BOD of 150 mg/l with a neat sketch. **20**

OR

b) Design and sketch a septic tank with dispersion trenches for an institution having a population of 200 persons. **20**

Module – III

IV. a) What are the different methods of sludge disposal. **5**

b) Explain the construction and working of a sludge digestion tank with a neat sketch. **15**

OR

c) What are the various types of sewers ? **5**

d) Explain the different systems of plumbing with neat sketches. **15**