

Code: CE6T4

III B.Tech - II Semester – Regular Examinations – May 2015

**ENVIRONMENTAL ENGINEERING - II
(CIVIL ENGINEERING)**

Duration: 3 hours

Marks: 5x14=70

Answer any FIVE questions. All questions carry equal marks

1. a) Briefly explain the merits and demerits of Conservancy and Water carriage system. 7 M

b) Explain the rational method of determining the quantity of storm water. Discuss the methods of determining various parameters used in the rational formula. 7 M

2. a) Design a sewer running 0.7 times full at maximum discharge for a town provided with the separate system serving a population of 1,50,000 persons. Water is supplied at a rate of 250 lpcd. Take Manning's 'n' as 0.013. Permissible slope is 1 in 600. Take peak factor of 2.0. 7 M

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. 7 M

3. a) Explain carbon cycle of decomposition. 7 M

- b) Derive an expression for first stage BOD. 7 M
4. a) What is a Grit chamber and explain its configuration with the help of a neat sketch. 7 M
- b) Describe in brief the various types of settlings. 7 M
5. a) Differentiate between standard and high rate trickling filters. 7 M
- b) With the help of a neat sketch explain the working of an Activated sludge process of sewage treatment. 7 M
6. a) What are the factors affecting self purification of polluted streams? What measures would you recommend to control stream pollution? 7 M
- b) Explain clearly the methods, problems & limitations of land disposal of sewage. 7 M
7. a) Explain with the help of a flowchart various processes involved in sludge treatment and disposal. 7 M
- b) Write a detailed note on anaerobic sludge digestion and also explain the effect of temperature and pH. 7 M

8. a) Describe briefly the various methods of final disposal of sewage. 7 M
- b) Write a note on sludge conditioning. Why elutriation is necessary prior to chemical conditioning? 7 M