

B.Tech III Year II Semester (R13) Regular Examinations May/June 2016

ENVIRONMENTAL ENGINEERING

(Civil Engineering)

Time: 3 hours

Max. Marks: 70

PART – A
(Compulsory Question)

- 1 Answer the following: (10 X 02 = 20 Marks)
- List out factors affecting the per capita demand.
 - What are the impurities present in water?
 - State different types of Coagulants used in water treatment.
 - Write short note on the following: (i) Scour valve. (ii) Check valve.
 - Differentiate between Sewer and sewerage.
 - What are the characteristics of waste water?
 - Draw a lay out a waste water treatment unit.
 - What is the necessity of sludge digestion?
 - State the term solid waste and list out various types of solid wastes.
 - Classify the various types of air pollutants.

PART – B
(Answer all five units, 5 X 10 = 50 Marks)

UNIT – I

- 2 (a) What are the important points to be considered for protected water supply systems?
(b) Explain the design period and factors affecting the design period.

OR

- 3 (a) Describe the various methods of population forecast and explain any one of them.
(b) What are the usual types of waterborne diseases? Enumerate the bacteria responsible for them.

UNIT – II

- 4 (a) What is sedimentation?
(b) Explain different types of sedimentation tanks.
(c) Differentiate between slow and rapid sand filters.

OR

- 5 (a) State the various layout of water distribution systems.
(b) Explain about preventive measures against waste water.

UNIT – III

- 6 (a) Describe the classification of sewerage systems.
(b) What are the factors to be considered before making selection for the material for sewers?

OR

- 7 (a) What is meant by time of concentration? What is its importance in the design of storm water sewers?
(b) Define the term B.O.D.
(c) Determine ultimate B.O.D for a sewage having 5-day B.O.D at 20°C as 200 p.p.m. Assume $R_{20} = 0.1$ per day.

UNIT – IV

- 8 (a) Describe about skimming tanks and design aspects.
(b) What is a trickling filter? State its types.

OR

- 9 (a) Enumerate various method of sludge disposal.
(b) What is septic tank? And explain the design aspects of a septic tank.

UNIT – V

- 10 (a) Discuss in briefly about various methods of disposal of refuse.
(b) Explain the various engineering systems for solid waste management.

OR

- 11 (a) Classify various categories of air pollution.
(b) State permissible limits of noise pollution.
