

B.Tech 6th Semester (Civil) F-Scheme Examination,

May-2017

SEWAGE AND SEWAGE TREATMENT

Paper-CE-308-F

Time allowed : 3 hours] [Maximum marks : 100

Note : (i) Question No.1 is compulsory.

- (ii) Attempt total five questions, at least one from each section.
- (iii) All questions carry equal marks.
1. (a) What is importance of dilution with aeration for BOD test ?
- (b) State the principle involved in sedimentation tank.
- (c) Classify the sludge treatment process.
- (d) State the principle of sanitary plumbing system.
- (e) Differentiate between noise and sound. 20

Unit-I

2. (a) A 60 cm diameter sewer is to discharge 0.07 cumecs at a velocity as self-cleansing as a sewer flowing full at 0.85 m/sec. Find the depth and velocity of flow and the required slope. Take uniform value of $N=0.015$. 10

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- (b) Explain the process of sewerage system. 10
3. (a) Draw and explain the trap used in residential buildings. 10
- (b) Write the methods of collection of waste from houses and buildings. 10

Unit-II

4. (a) A stream, saturated with DO, has a flow of $1.3 \text{ m}^3/\text{s}$, BOD of 4 mg/l and rate constant of 0.3 per day. It receives an effluent discharge of $0.25 \text{ m}^3/\text{s}$ having BOD 20 mg/l , DO 5 mg/l and rate constant 0.13 per day. The average velocity of flow of the stream is $0.18/\text{s}$, calculates the DO deficit at point 20 km and 40 km downstream. Assume that the temperature is 20°C throughout and BOD is measured at 5 days. Take saturation DO at 20°C as 9.17 mg/l . 10
- (b) What is meant by disposal of wastewater by dilution? Mention the conditions favourable for it. 10
5. (a) Describe the Bangalore method of disposal. 10
- (b) Discuss the waste disposal by irrigation. 10

Unit-III

6. (a) What is coagulation? Write advantages and disadvantages of coagulation. 10
- (b) Write working of Humus tank. 10
7. (a) Write a short note on stabilization pond. 10
- (b) Draw a flow chart for ASP. 10
8. (a) Do comparison between noise and sound. Write the source and their level of noise. 10
- (b) How to control noise in Industries? 10
9. (a) Classify various types and sources of air pollution. 10
- (b) What do you understand by aerosols? Describe various types of aerosols along with their characteristics. 10