Reg. No:

SIDDHARTH INSTITUTE OF ENGINEERING & TECHNOLOGY: PUTTUR
(AUTONOMOUS)
B.Tech IV Year I Semester Supplementary Examinations August-2021
ENVIRONMENTAL ENGINEERING
(Civil Engineering)

Time: 3 hours   Max. Marks: 60

(Answer all Five Units **5 x 12 = 60** Marks)

UNIT-I

1 a What are the necessities and importance of water supply scheme?   **6M**
   b What are points to be kept in mind while selecting a site for intake structure? **6M**

OR

2 The populations of 5 decades from 1960 to 2000 are given below in table. Find out the population 2010, 2020 & 2035 beyond the last known decade. By
   (a) Arithmetic increase method (b) Geometrical method   **12M**

Year	1960	1970	1980	1990	2000
Population	25000	28000	34000	42000	47000

UNIT-II

3 a Compute the dimensions of continuous flow rectangular sedimentation tank for a population of 20000 persons with a daily per capita water allowance of 120 liters. Assume detention period to be 6 hours. **7M**
   b Write short notes on types of screens.   **5M**

OR

4 a Design a rapid sand filter to treat a city of population 100000 with an average per capita demand of 160 lpcd. **5M**
   b List the types of chlorination and explain break point chlorination in detail. **7M**

UNIT-III

5 A certain district of a city has a projected population of 80000 residing over an area of 70 hectares. Find the design discharge for the sewer line, for the following data: **12M**
   (i) Rate of water supply = 200 LPCD
   (ii) Average impermeability coefficient for the entire area =0.3
   (iii) Time of concentration = 50 minutes.

OR

6 a What should be the characteristics of materials to be used for sewers?   **5M**
   b What are the requirements of a distribution system?   **7M**

UNIT-IV

7 a Define BOD & COD and write advantages of oxidation ponds?   **6M**
   b What do you understand by oxidation pond and explain the process of oxidation and stabilization? **6M**

OR

8 Design a grit chamber for a maximum wastewater flow of 10000 m3/day to remove particles up to of 0.25 mm dia, having specific gravity of 2.65. The settling velocities of these particles is found to range from 0.02 to 0.025 m/sec. Maintain a constant flow through velocity of 0.28 m/sec through the provision of a proportional flow weir **12M**

UNIT-V

9   Explain, with the help of a flow chart, various processes involved in sludge treatment and disposal.   **12M**

OR

10 a Discuss the criterion for design of a septic tank.   **9M**

    b Why dewatering of sludge is necessary?   **3M**

*** END ***