R18

Reg. No:

SIDDHARTH INSTITUTE OF ENGINEERING & TECHNOLOGY:: PUTTUR
(AUTONOMOUS)
B.Tech III Year II Semester Regular Examinations July-2021
ENVIRONMENTAL ENGINEERING
(Civil Engineering)

Time: 3 hours   Max. Marks: 60

PART-A
(Answer all the Questions 5 x 2 = 10 Marks)

1	a	List out various types of water demand.	L1	2M
	b	Define detention period	L1	2M
	c	List out the methods of distribution system	L1	2M
	d	What is the significance of pH value in sewage treatment?	L1	2M
	e	What are the types of self-purification?	L1	2M

PART-B
(Answer all Five Units 5 x 10 = 50 Marks)

UNIT-I

2 a Explain the various types of water demand in detail.   L2   5M

   b Population of a town as obtained from the census reports is as below: Estimate the   L3   5M
population after 3 and 5 decades by Incremental Increase Method

Year	1951	1961	1971	1981
Population	100000	109000	116600	128200

OR

3 a Explain the surface and subsurface sources of water.   L2   5M

   b The populations of 5 decades from 1960 to 2000 are given below in table. Find out the   L3   5M
Population 2010, 2020 & 2030 beyond the last known decade. By Arithmetic increase
Method.

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

UNIT-II

4 a Draw the layout and general outline of surface and subsurface water treatment plant.   L2   5M

   b Determine the dimensions of a set of rapid sand filters for treating water required for a   L3   5M
population of 10000 with an average rate of demand 200 lpcd

OR

5 a What are the different methods of feeding coagulant in water treatment plant   L1   5M

   b Draw the layout and general outline of surface and subsurface water treatment plant.   L2   5M

UNIT-III

6 a What are sewer appurtenances? Sketch and explain the use of drop man hole   L2   5M

   b List different types of sewerage system? Give the advantages and disadvantages of any   L1   5M
one system

OR

7 a With neat sketch, explain the house service connection from a street main to building   L2   6M

   b Explain the use of different materials of sewer and their suitability   L2   4M

UNIT-IV

8   Design a grit chamber for a maximum wastewater flow of 10000 m3 /day to remove particles up   **L4**   **10M**
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

OR

9   **a**   List the types of screens used in sewage treatment.   **L1**   **5M**

     b   With a sketch, explain the working of a skimming tank   **L2**   **5M**

UNIT-V

10   **a**   Explain the factors affecting the sludge digestion.   **L2**   **5M**

     b   With the help of sketch, explain the gravity-sludge thickener   **L2**   **5M**

OR

11   Design a septic tank for 200 persons assuming water supply as 120 lpcd   **L4**   **10M**

END