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SIDDHARTH INSTITUTE OF ENGINEERING & TECHNOLOGY:: PUTTUR
(AUTONOMOUS)

B.Tech IV Year I Semester Regular Examinations Nov/Dec 2019

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? **5M**
b Draw the flow chart of public water supply system. **7M**

OR

- 2 a The populations of 5 decades from 1960 to 2000 are given below in table. Find out the population 2015, 2027 & 2035 beyond the last known decade. By (a) Arithmetic increase method (b) Geometrical method **7M**

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

- b Explain the sources of water. **5M**

UNIT-II

- 3 List out the different water borne diseases explain the effects of excess fluoride & nitrogen contents. **12M**

OR

- 4 Explain working of rapid sand filter with the help of neat sketch. **12M**

UNIT-III

- 5 a What are the requirements of a distribution system? **6M**
b List out the different types of layouts of city water distribution system. **6M**

OR

- 6 A main combined sewer is to be designed to serve an area of 12 sq.km with a population density of 250 persons/hectare. The average rate of sewage flow is 250 LPCD. The maximum flow of 100% in excess of average together with the rainfall equivalent of 15 mm in 24 hours, all of which are runoff. Determine the capacity of the sewer. Taking the maximum velocity of flow as 3 m/sec., determine the size of the circular sewer. **12M**

UNIT-IV

- 7 a Define BOD & COD. **4M**
b For a wastewater sample, 5-day BOD at 200C is 200 mg/L. What will be 4-day BOD at 300C BOD at 270 C. **8M**

OR

- 8 Design a grit chamber for a maximum wastewater flow of 10000 m³ /day, to remove particles upto of 0.25 mm dia, having specific gravity of 2.65. The settling velocities of these particles are 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 advantage and disadvantage of Septic tank. **6M**
b What is soak pit and why it is necessary? **6M**

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