Q.P. Code: 16CE133 **R16**

Reg. No: | | | | | | | | | | |

SIDDHARTH INSTITUTE OF ENGINEERING & TECHNOLOGY: PUTTUR

(AUTONOMOUS)

B. Tech IV Year I Semester Regular & Supplementary Examinations Feb-2021

ENVIRONMENTAL ENGINEERING

(Civil Engineering)

Time: 3 hours Max. Marks: 60

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

UNIT-I

1	a	Write short notes on design period considering the various factors.	6M
	b	With sketch, explain the hydrologic cycle of water.	6M
		OR	
2	a	Write short notes on reservoir intakes.	6M
	b	Explain the factor affecting the per capita demand.	6M

UNIT-II

3	a	Explain any two physical characteristics of water.	7M
	b	Briefly explain the Lime soda or Zeolite process of water softening.	5M
		OR	
4	a	Write short notes on methods of coagulant feeding.	7M
	b	Compare slow sand filter with rapid sand filter.	5M

UNIT-III

5	a	Write short notes on methods of distribution system.	6M
	b	What do you understand by dry weather flow?	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		Design a grit chamber for a maximum wastewater flow of 10000 m^3/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
		OR	
8	a	Mention the advantages and disadvantages of oxidation ponds?	6M
	b	Compare between the conventional rate filter and high-rate filter.	6M

UNIT-V

9	a	What do you understand by sludge thickening?	4M
	b	Explain the methods of dewatering the sludge on sludge drying beds.	8M
		OR	
10	a	Briefly explain the process involved in self-purification.	8M
	b	Why dewatering of sludge is necessary?	4M

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