Total No. of Questions – [03]

Total No. of Printed Pages: 02

G.R. No.	

PAPER CODE	

MAY 2022 - ENDSEM EXAM

T. Y. B. TECH. (Civil Engineering) (SEMESTER - II)

COURSE NAME: Environmental Engineering

COURSE CODE: CVUA32183

(PATTERN 2018)

Time: [1Hr]

[Max. Marks: 30]

(*) Instructions to candidates:

1) **Figures to the right indicate full marks.**
2) **Use of scientific calculator is allowed**
3) **Use suitable data where ever required**

Q1	a) Explain the Water Treatment Flow diagram for River as a source with considerable pollution.	4 M
	b) 1) Q= 0.069 m3/s, 250 m3/hr 2) Area= 7.5 m2 3) D of outer step= 3.09m Provide 4 steps ht 0.5 m 4) D of inlet= 300mm 5) time of contact= 0.64 sec	6 M
	OR	
	b) 1) Q= 4.164 m3/min, 0.0694 m3/ses 2) volume= 83.28 m3 3) Vertical paddle of flocculator- depth 3m Surface area= 83.28/3= 27.76 m2 D= 5.94 m Provide 6m dia and 3 m depth Power= 210.282 watts Ap= 8.65 m2 Area of paddles= 18*3.14 Length of paddle= 15.30 % Length of each paddle= 2.4m width of palte= 0.35m Area of one plate= 0.84 total no of plates= total area/area of one plate= 8.65/0.84=10.28 Provide 12 no of paddles with 3 paddles on each arm.	6 M

Q2	a) Explain the factors affecting the disinfection process and Chick's Law of Disinfection.	4 M
	b) Average daily demand= $90*10^5$ Lit/day Max demand= $16.2*10^6$ Lit/day Area=3750 sq m Area of one unit= 750 sq m Size 38.72*19.36 m	1 Marks 2 Marks 2 Marks 1 Marks
	OR	
	b) Design a set of rapid sand filters for treating water required for a population of 80,000. Rate of water supply= 200 lit/hr/day. The filters are rated to work at 5000 lit/hr/m2. Show the arrangement of filter units. Assume suitable data which is not given.	6 M
Q3	a) Explain Automation in Water Supply Scheme in Smart City.	4 M
	b) Explain the Carbon Adsorption Technique towards the removal of Taste and Odor from water.	6 M
	OR	
	b) Classify the Membrane Techniques used to removal of Dissolved Salts from water.	6 M
