Vivekananda College of Engineering & Technology, Puttur
[A Unit of Vivekananda Vidyavardhaka Sangha Puttur ®]
Affiliated to VTU, Belagavi & Approved by AICTE New Delhi

CRM08	Rev 1.10	<Civil>	<30-11-2020>

CONTINUOUS INTERNAL EVALUATION-2

Dept: Civil Engg	Sem / Div: 5	Sub: MWWE	S Code: 18CV55
Date:03-12-2020	Time: 9:30-11:00 am	Max Marks: 50	Elective: N

Note: Answer any 2 full questions, choosing one full question from each part.

QN		Questions	Marks	RBT	COs
		PART A			
1	a	Discuss in detail the process deoxygenation and reoxygenation with respect to self-purification of natural waters with a neat sketch	10	L1	CO3
	b	Draw the flow diagram of municipal wastewater treatment and highlight the important operation	10	L2	CO3
	c	Explain a) Sewage farming b) Sewage Sickness	5	L1	CO3
		OR			
2	a	Explain the importance of screens and types of screens in the sewage treatment process.	12	L2	CO3
	b	A stream, saturated with D.O., has a flow of 1.2 m3/sec, BOD of 4 mg/L and rate constant of 0.3 per day. It receives an effluent discharge of 0.25 m3/sec having BOD of 20 mg/L, D.O. 5 mg/L and rate constant 0.13 per day. The average velocity of flow of the stream is 0.18 m/sec. Calculate the D.O. deficit at point 20 kms and 40 kms downstream. Assume the temperature as 20oC, throughout and BOD is measured at 5 days. Take saturation D.O. at 20'C as 9.17 mg/L.	13	L3	CO3
		PART B			
3	a	Give the comparison between conventional and high rate trickling filters.	10	L2	CO4
	b	Design a rectangular sedimentation tank for a population of 90 thousand with rate of water supply 140 litres per capacity per day,80% of which reaches the treatment plant. Assume peak factor as 1.2 and horizontal velocity of flow 0.3 m/minute. Check for overflow rate.	10	L3	CO3
	c	The sewage of a town is to be discharged into a river. The quantity of sewage produced per day is 8 million liters and its BOD is 250 mg/l. If the discharge in the river is 200 l/s and if its BOD is 6mg/l, find the B.O.D of the diluted water.	5	L2	CO3
		OR			
4	a	What the problems encountered in the operation of trickling filter.	5	L2	CO4
	b	Determine the depth and volume of a standard rate trickling filter for the following data: i. Quantity of settled sewage = 6 MLD ii. BOD of sewage = 200 mg/l iii. Rate of organic loading = 200 gm/m3/day Rate of surface loading = 2500 l/m2/day	10	L3	CO2
	c	Design a circular settling tank for primary treatment of domestic sewage for a flow of 12 MLD. Assume suitable values of hydraulic retention time and surface loading rate.	10	L3	CO1

Prepared by: Prashantha

HOD