

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

CRM08

Rev 1.12

Civil

15-11-22

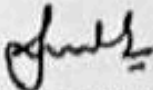
**CONTINUOUS INTERNAL EVALUATION - 1**

Dept: Civil Engg	Sem / Div: 5	Sub: Municipal Wastewater Engineering	S Code: 18CV55
Date: 23-11-22	Time: 9:30-11:00	Max Marks: 50	Elective: N

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

QN	Questions	Marks	RBT	CO's
<b>PART A</b>				
1 a	Briefly explain the essential requirements of a good sewer material.	10	L2	CO1
b	Explain what you mean by sewerage system and discuss relative merits and demerits of: i) Separate system of sewerage ii) Combined system of sewerage	8	L2	CO1
c	Briefly explain how the sewers are tested for leakage after laying.	7	L2	CO1
<b>OR</b>				
2 a	Design the section of a combined circular sewer from the following data, Area to be served =150 hectares, Population of the locality= 50,000, Maximum permissible velocity=3.2m/sec, Time to carry= 5min, Time of Flow= 20 min, Rate of water supply=270 l/c/d, Impermeability factor=0.45, $i = \frac{760}{i+20}$	10	L3	CO1
b	Define Dry Weather flow. Explain the various factors affecting the dry weather flow.	8	L2	CO1

	c Write a short note on oil and grease traps.	7	L2	CO1
<b>PART B</b>				
3	a Design a sewer to serve a population of 36,000 the rate of water supply being 135 litres per capita per day of which 80% finds its way into sewer. The sewer is laid at a slope of 1 in 625 and sewer should be designed to carry three times dry weather flow when running full, $N=0.012$ .	10	L3	CO2
	b Explain self cleansing velocity and non scouring velocity. What are different types of sampling? Explain.	8	L2	CO2
	c Explain the concept of BOD and COD. Enumerate their limitations.	7	L2	CO2
<b>OR</b>				
4	a The BOD of sewage sample incubated for 1 day at $30^{\circ}\text{C}$ has been found to be 120mg/l. What will be its 5 day BOD at $20^{\circ}\text{C}$ ? Assume $K_{20} = 0.12/\text{day}$ .	10	L3	CO2
	b Draw a neat flow diagram employed for a municipal wastewater treatment plant. Indicate the importance of each unit indicated in the flow diagram.	8	L2	CO2
	c Explain the physical, chemical and biological characteristics of waste water.	7	L2	CO2

  
 Prepared by: Sumanth A

  
 HOD