

Reg.No.:

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VIVEKANANDHA COLLEGE OF ENGINEERING FOR WOMEN
[AUTONOMOUS INSTITUTION AFFILIATED TO ANNA UNIVERSITY, CHENNAI]
Elayampalayam – 637 205, Tiruchengode, Namakkal Dt., Tamil Nadu.

Question Paper Code: 170002

B.E. / B.Tech. DEGREE END-SEMESTER EXAMINATIONS – NOV. / DEC 2025

Third Semester

Civil Engineering

U23CE305 – WATER SUPPLY AND WASTE WATER ENGINEERING

(Regulation 2023)

Time: Three Hours

Maximum: 100 Marks

Answer ALL the questions

Knowledge Levels (KL)	K1 – Remembering	K3 – Applying	K5 - Evaluating
	K2 – Understanding	K4 – Analyzing	K6 - Creating

PART – A

(10 x 2 = 20 Marks)

Q.No.	Questions	Marks	KL	CO
1.	State the various reasons for water demand in the recent times.	2	K1	CO1
2.	List the functions of intake structure.	2	K1	CO1
3.	Differentiate between unit operation and unit process.	2	K2	CO2
4.	State the function of sedimentation tanks.	2	K1	CO2
5.	Write any four requirements of a good distribution system.	2	K1	CO3
6.	Define ferrule in house service connection.	2	K1	CO3
7.	Define population equivalent.	2	K1	CO4
8.	Write the characteristics of sewage.	2	K1	CO4
9.	List any two methods of sludge disposal.	2	K1	CO5
10.	Write the purpose of aeration in the activated sludge process.	2	K1	CO5

PART – B

(5 x 13 = 65 Marks)

Q.No.	Questions	Marks	KL	CO
11. a)	Describe the various sources of water and their characteristics with suitable diagram.	13	K2	CO1

(OR)

	b)	Discuss about the dry and wet intake tower to draw water from the reservoir with suitable diagram.	13	K2	CO1
12.	a)	With the help of diagram, Explain the Process of rapid Sand filter.	13	K2	CO2
		(OR)			
	b)	Define Desalination. Explain any two methods of desalination with neat Sketch.	13	K2	CO2
13.	a)	Discuss with neat sketches the various types of layout of distribution system and state their advantages and disadvantages.	13	K2	CO3
		(OR)			
	b)	Explain in detail about house service connections with neat sketch.	13	K2	CO3
14.	a)	Explain the causes of corrosion in sewers. Discuss various methods for prevention and control.	13	K2	CO4
		(OR)			
	b)	Illustrate with neat sketches how different sewer appurtenances are applied to ensure smooth functioning of sewerage systems.	13	K2	CO4
15.	a)	Detail the design, operation and advantages of UASB (Upflow Anaerobic Sludge Blanket) reactor.	13	K2	CO5
		(OR)			
	b)	Describe with neat sketches the working principle of trickling filters and summarize their advantages and disadvantages.	13	K2	CO5

PART – C

(1 x 15 = 15 Marks)

Q.No.	Questions	Marks	KL	CO
16.	a) Discuss ten parameters of water quality standards as per IS 10500 and WHO.	15	K2	CO1
	(OR)			
	b) Explain the various physio-chemical characteristics of sewage and state their environmental significance.	15	K2	CO4