

THE KAVERY ENGINEERING COLLEGE*(An Autonomous Institution)***M.E DEGREE END SEMESTER THEORY EXAMINATIONS, NOV/DEC 2025****First Semester****Environmental Engineering****PEVT2404 - Water Transmission, Water Distribution and Sewerage Systems****Regulations - 2024***Duration : 3 Hrs**Maximum : 100 Marks***PART - A (ANSWER ALL QUESTIONS) (Marks 10*2=20)**

<i>Q.No</i>	<i>Questions</i>	<i>BTL</i>	<i>CO</i>	<i>Marks</i>
1.	Define the specific volume of a fluid.	L1	1	2
2.	What is meant by the Continuity Equation?	L1	1	2
3.	Differentiate between gravity mains and pumping mains in water distribution.	L2	2	2
4.	Outline the concept of water hammer pressure.	L2	2	2
5.	Classify the layouts of water distribution systems.	L2	3	2
6.	How are leaks detected in water pipelines?	L1	3	2
7.	Why is partial flow ensured in sewer lines?	L1	4	2
8.	Define an outfall sewer.	L1	4	2
9.	Show the rational formulas used for storm water runoff estimation.	L2	5	2
10.	Distinguish between combined and separate sewer systems.	L2	5	2

PART - B (ANSWER ALL QUESTIONS) (Marks 5*16 = 80)

Q.No	Questions		BLT	CO	Marks														
11.	a	Explain the principles of fluid flow with reference to continuity, energy, and momentum principles.	L2	1	16														
		Or																	
	b	The difference in water surface levels in two tanks, which are connected by three pipes in series of lengths 300 m, 170 m and 210 m and of diameters 300 mm, 200 mm and 400 mm respectively, is 12m. Find the rate of flow of water if co – efficient of friction are 0.005, 0.0052 and 0.0048 respectively, considering: (i) Minor losses also (ii) Neglecting minor losses.	L2	1	16														
12.	a	Determine the storage required to supply the demand shown in the following table if the inflow of water to the reservoir is maintained at a uniform rate throughout 24 hours.	L2	2	16														
		<table><tr><td>Time</td><td>00-04</td><td>04-08</td><td>08-12</td><td>12-16</td><td>16-20</td><td>20-24</td></tr><tr><td>Demand in million litres</td><td>0.48</td><td>0.87</td><td>1.33</td><td>1.00</td><td>0.82</td><td>0.54</td></tr></table>	Time	00-04	04-08	08-12	12-16	16-20	20-24	Demand in million litres	0.48	0.87	1.33	1.00	0.82	0.54			
Time	00-04	04-08	08-12	12-16	16-20	20-24													
Demand in million litres	0.48	0.87	1.33	1.00	0.82	0.54													
		Or																	
	b	Compare the various types of pipe joints based on the material and purpose in water supply.	L2	2	16														

13.	a	Illustrate the step-by-step procedure of the Hardy Cross method for analyzing pipe distribution networks.	L2	3	16
		Or			
	b	Show the different types of software used in water distribution systems and explain any two methods in detail.	L2	3	16
14.	a	Recall the various appurtenances used in sewerage systems with neat sketches.	L2	4	16
		Or			
	b	How corrosion occurs in sewers and explain the various corrosion preventive methods.	L2	4	16
15.	a	Explain the procedure for estimating storm water runoff using rainfall intensity duration frequency (IDF) relationships.	L5	5	16
		Or			
	b	Interpret the applications of Sewer CAD and Sewer GEMS in storm water drainage design.	L5	5	16