

THE KAVERY ENGINEERING COLLEGE*(An Autonomous Institution)***B.E/B.TECH DEGREE END SEMESTER THEORY EXAMINATIONS, NOV/DEC 2025***Sixth Semester**Agricultural Engineering***AI3602 – Irrigation and Drainage Engineering***Regulations - 2021**Duration : 3 Hrs**Maximum : 100 Marks***PART – A (ANSWER ALL QUESTIONS) (Marks 10*2=20)**

<i>Q.No</i>	<i>Questions</i>	<i>BLT</i>	<i>CO</i>	<i>Marks</i>
1.	Define duty.	L1	1	2
2.	Outline the term permanent wilting point.	L1	1	2
3.	List the types of canal lining.	L2	2	2
4.	What are the objectives of culverts in water diversion structures?	L1	2	2
5.	Classify the types of earthen dams.	L2	3	2
6.	How spillway differs from a sluice?	L1	3	2
7.	Distinguish between canal Syphon and Syphon aqueduct.	L2	4	2
8.	List out the objectives of water irrigation association.	L2	4	2
9.	What are the components of surface drainage system?	L1	5	2
10.	Outline the factors affecting permeability.	L2	5	2

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

<i>Q.No</i>	<i>Questions</i>	<i>BLT</i>	<i>CO</i>	<i>Marks</i>
11.	a The details given below shows the details for a certain crop:	L3	1	16

Month	Average Monthly Temperature (°C)	Monthly % of day time hours of the year	Useful Rainfall (cm)
November	19	7.19	-
December	16	7.15	1.2
January	12.5	7.30	0.8
February	13	7.03	-

Using Blaney Criddle equation and a crop factor of 0.75, Determine: Consumptive Use, Consumptive Irrigation Requirement, Field Irrigation Requirement and Gross Irrigation Requirement. Given, Water Application Efficiency = 70% Water conveyance efficiency = 60% Latitude of the place = 300 N.

Or

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| b i | Interpret the relationship between duty, delta and base period with appropriate equations. | L3 | 1 | 8 |
| ii | Explain in detail about Irrigation Scheduling. | L3 | 1 | 8 |

12.	a	Discuss the sprinkler irrigation method and explain its types, Efficiency and Limitations.	L3	2	16
		Or			
	b	Design an irrigation channel for the following data using Kennedys theory: Full Supply Discharge = 14.16 cumec Slope, $S = 1/5000$ Kutters rugosity coefficient, $N=0.0225$ Critical Velocity ratio , $m=1$ Side slope, $Z= 1/2$	L3	2	16
13.	a i	Outline the factors to be considered during hydraulic design of dams.	L2	3	8
	ii	Classify the types of weirs.	L2	3	8
		Or			
	b	Illustrate the causes of failure of Earth dam and Gravity dam? State its remedies.	L2	3	16
14.	a	Classify the types of cross drainage works. Describe them briefly with sketches.	L2	4	16
		Or			
	b	Explain the techniques in On-Farm Water Management Options for Increasing Irrigation Efficiency in Command Areas.	L2	4	16
15.	a i	A watershed of 1500 hectares is discharging through a drain at an average ratio of 2.5 m ³ /s. Analyze the drainage coefficient. If the drainage coefficient is 3 cm, what would be the discharge through the drain?	L4	5	8
	ii	List the methods of determining drainage coefficient.	L2	5	8
		Or			
	b	Explain in detail about the management of recycled irrigation water.	L2	5	16