CBCS SCHEME

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BCV602

Sixth Semester B.E./B.Tech. Degree Examination, Dec.2025/Jan.2026
Irrigation Engineering and Hydraulic Structures

Time: 3 hrs. Max. Marks: 100

Note: 1. Answer any FIVE full questions, choosing ONE full question from each module.
2. M : Marks , L: Bloom's level , C: Course outcomes.

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		Module – 1	M	L	C
Q.1	a.	List various types of flow irrigation and explain any one type in detail.	06	L2	CO2
	b.	What is Bandhara Irrigation? What are the advantages and disadvantages.	06	L2	CO2
	c.	Define the term irrigation. List and explain various benefits and ill effects of Irrigation.	08	L2	CO2
		OR			
Q.2	a.	Find the depth of irrigation water required in order to ensure sufficient availability of moisture uniform growth of crop for the following data: permanent wilting coefficient = 20% ; Field capacity of soil = 36% ; Density of soil = 1.75 g / cc ; Effective depth of root zone = 800 mm ; Daily consumption use of water = 40 mm. Also determine frequency of watering. Assume OMC as 75% of available moisture.	08	L3	CO2
	b.	List and explain various factors affecting duty.	06	L2	CO2
	c.	Define Duty, Delta and Base period. Derive an expression to establish relation between Duty, Delta and Base period.	06	L2	CO2
		Module – 2			
Q.3	a.	With help of neat sketch, explain various storage zones of reservoir.	08	L2	CO2
	b.	Briefly explain the investigations to be carried out for reservoir planning.	06	L2	CO2
	c.	With aid of a neat sketch, explain how economical height of a dam is determined.	06	L2	CO2
		OR			
Q.4	a.	Enumerate the points that must be considered in aligning an irrigation canal.	06	L2	CO2
	b.	Write a detailed note on classification of canals.	06	L2	CO2
	c.	Explain stepwise Lacey's procedure for designing unlined canals.	08	L3	CO2
		Module – 3			
Q.5	a.	With help of neat sketch, explain different forces acting on Gravity Dam.	10	L2	CO1
	b.	Derive an expression for the limiting height of a Low Gravity Dam.	10	L3	CO1
		OR			
Q.6	a.	List and explain various advantages and disadvantages of gravity dams.	10	L2	CO1
	b.	Explain various modes of failure of gravity dam and mention their remedies.	10	L3	CO1
		Module – 4			
Q.7	a.	With aid of neat sketches, explain different causes of failure of earth dams.	10	L3	CO1
	b.	List different types of spillways and explain any one type of spillway in detail.	10	L3	CO1

		OR			
Q.8	**a.**	Describe the design principles that are involved in design of ogee spillway.	**10**	**L3**	**CO1**
	b.	With help of neat sketches, explain various types of earth dams.	**10**	**L3**	**CO1**
		Module – 5			
Q.9	**a.**	Write a detailed note on Bligh's creep theory. Also mention the limitations of this theory.	**10**	**L3**	**CO3**
	b.	Draw a neat sketch of layout of a diversion head work and indicate various components of the system. Also mention the function of each component.	**10**	**L3**	**CO3**
		OR			
Q.10	**a.**	Briefly outline Khosla's theory on the design of weirs on permeable foundation. Enumerate the various corrections that are needed in the application of this theory.	**10**	**L3**	**CO3**
	b.	Describe how does Khosla's theory differ from Bligh's theory with regard to design of weir on permeable foundation.	**10**	**L3**	**CO3**

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