U.S.N.										

B.M.S. College of Engineering, Bengaluru-560019

Autonomous Institute Affiliated to VTU

May / June 2025 Semester End Main Examinations

Programme: B.E. **Semester: VIII**

Branch: Civil Engineering **Duration: 3 hrs.**

Course Code: 22CV8PEIWM **Max Marks: 100**

Course: Integrated Watershed Management

Instructions: 1. Answer any FIVE full questions, choosing one full question from each unit.
2. Missing data, if any, may be suitably assumed.

Important Note: Completing your answers, compulsorily draw diagonal cross lines on the remaining blank pages. Revealing of identification, appeal to evaluator will be treated as malpractice.

			UNIT - I	*CO*	*PO*	Marks
1	a)		Explain the concept of catchment and its importance.	CO1	PO1	**10**
	b)		Illustrate the conjunctive use of water resources and rainwater	CO1	PO1	**10**
			OR			
2	a)		Define watershed management and discuss its objectives.	CO1	PO1	**10**
	b)		Elaborate on social aspects of watershed management and discuss the role of community participation.	CO1	PO1	**10**
			UNIT - II			
3	a)		Describe the watershed modeling approaches commonly used today.	CO2	PO1	**10**
	b)		Interpret the different hydrological processes with a neat sketch.	CO2	PO1	**10**
			OR			
4	a)		Explain the steps in the rainfall-runoff modeling. Elaborate on the SCS-CN method for runoff modelling.	CO2	PO1	**10**
	b)		Describe any empirical method for the estimation of the soil erosion in a catchment.	CO2	PO1	**10**
			UNIT - III			
5	a)		Discuss flood estimation, management and the parameters considered in the process.	CO2	PO1	**10**
	b)		Differentiate between flood routing through channels and reservoir.	CO2	PO1	**10**
			OR			

	6	a)	Explain the characteristics of drought in general and its classification according to the National Commission on Agriculture in India.	CO2	PO1	**10**
		b)	Discuss the causes and impact of drought. Also, elaborate on the drought management strategies.	CO2	PO1	**10**
			UNIT - IV			
	7	a)	List the key parameters used to assess water quality and explain the water quality monitoring procedure.	CO3	PO1	**10**
		b)	Explain the process of eutrophication in a lake caused by excessive nutrient pollution, showing the key stages and their consequences.	CO3	PO1	**10**
			OR			
	8	a)	Explain the key difference between point and non-point sources of water pollution, providing examples of each.	CO3	PO1	**10**
		b)	Describe the various types of water pollution. Discuss the main sources of water pollution and their contribution to water quality deterioration.	CO3	PO1	**10**
			UNIT - V			
	9	a)	Elaborate on the application of remote sensing and GIS in watershed management.	CO3	PO1	**10**
		b)	Describe the role of the Decision Support Systems in watershed management.	CO3	PO1	**10**
			OR			
	10	a)	Discuss the benefits of integrating GIS, remote sensing with Decision Support Systems in watershed management.	CO3	PO1	**10**
		b)	With the help of a case study, explain the usage of modern techniques in watershed management.	CO3	PO1	**10**

****