O.P.Code: 20CE0126	R20	H.T.No.									

SIDDHARTH INSTITUTE OF ENGINEERING & TECHNOLOGY:: PUTTUR
(AUTONOMOUS)
B.Tech III Year II Semester Regular & Supplementary Examinations June-2025
HYDROLOGY AND WATER RESOURCES ENGINEERING
(Civil Engineering)

Time: 3 Hours **Max. Marks: 60**

(Answer all Five Units **5 x 12 = 60** Marks)

		UNIT-I			
1		Explain the components of hydrological cycle with the help of a sketch.	CO1	L2	12M
		OR			
2	a	Compute the weekly evaporation from a reservoir using the water-budget method from the following data recorded during the week. Average inflow into the reservoir is 32.5m^3/s, average out flow from the reservoir is 40.2m3/s,average water spread area is 15.8km^2, storage at the beginning of the week is 9180ha-m and storage at the end of the week is 8360ha-m.	CO1	L1	6M
	b	What do you mean by Hydrograph and Unit hydrograph?	CO1	L3	6M
		UNIT-II			
3		Explain the necessity and importance of Irrigation.	CO2	L2	12M
		OR			
4	a	Enumerate in detail about factor affecting duty of irrigation water.	CO2	L1	6M
	b	Explain in detail about the methods of improving duty.	CO2	L2	6M
		UNIT-III			
5		Explain any five irrigation efficiencies.	CO3	L2	12M
		OR			
6		A field of 4 hectares has an average root zone depth of 1.0m, a field capacityof 18% (both by weight). Assume that it is desirable to irrigation when 60% of available moisture has been extracted. The field is irrigated by a sprinkler system which delivers 300 m3/hour over a period of 12 hours. What is water application efficiency? Density of soil is 1400 kg/m3.	CO3	L3	12M
		UNIT-IV			
7		Explain about cross drainage work and its types.	CO5	L2	12M
		OR			
8		A compressible layer is expected to have total settlement of 15 cm under a given loading. It settles by 3 cm at the end of two months after the application of load increment? How many months will be required to reach a settlement of 7.5 cm? What is the settlement in 18 months? The layer has double drainage.	CO5	L3	12M
		UNIT-V			
9		Classify the various types of dams according to use in detail with sketches.	CO6	L2	12M
		OR			
10		A masonry dam 6 m high and 1.5 m wide at the top and 4.5 m wide at the bottom, with vertical face. Determine the normal stresses at the toe and heel for reservoir emptyand reservoir full conditions. Take ρ=2.4 and c=1.	CO6	L3	12M

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