SIDDHARTH INSTITUTE OF ENGINEERING & TECHNOLOGY:: PUTTUR
(AUTONOMOUS)
B.Tech III Year II Semester Regular Examinations August-2023
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	Explain the water budget method with a neat sketch.	CO1	L2	6M
	b	Explain about Φ-index and W-index.	CO1	L2	6M

UNIT-II

3	a	Explain ground water well and basic assumptions.	CO1	L2	6M
	b	In certain alluvial basin of 120km^2, 100Mm^3 of ground water was pumped in a year and the ground water table dropped by 5m during the year. Assuming no replenishment, estimate the specific yield of the aquifer. If the specific retention is 12%, what is the porosity of the soil?	CO1	L2	6M
		OR			
4		The left branch canal carrying a discharge of 20cumecs has a Culturable commended area of 20000 hectares? The intensity of rabi crop is 80% and base period is 120 days. The right branch canal carrying a discharge of 8 cumecs has a Culturable commanded area of 12000 hectares, intensity of irrigation of rabi crop is 50% and base period is 120 days. Compare the efficiencies of the two canal systems.	CO2	L3	12M

UNIT-III

5		Explain any five irrigation efficiencies.	CO3	L2	12M
		OR			
6		Demonstrate about consumptive use of water and w rite in detail about factors affecting consumptive use of water.	CO4	L2	12M

UNIT-IV

7		Explain about cross drainage work and its types.	CO5	L2	12M
		OR			
8		Explain the different types of zones of storages in the reservoir with the help of neat sketch.	CO5	L2	12M

UNIT-V

9		Classify the various types of dams according to use in detail with sketches.	CO6	L2	12M
		OR			
10	a	Explain with sketch about galleries in gravity dam.	CO6	L2	6M
	b	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 empty and reservoir full conditions. Take ρ=2.4 and c=1.	CO6	L2	6M

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