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Internal Assessment Test 2 – June 2022

Answer all questions. Assume any missing data suitably. Provide neat sketches wherever necessary		Marks	CO	RBT
1	a. Describe the method of determining infiltration capacity using a double ring infiltrometer	[6M]	CO2	L2
	b. Distinguish between potential and actual evaporation	[4M]	CO2	L2
2	For a storm of 3hr duration the rainfall rates are as follows.	[10M]	CO3	L3

Time (minutes)	30	30	30	30	30	30
Rainfall (cm/hr)	1.4	3.4	4.8	3.2	2.0	1.2

If the surface runoff is 3.4cm determine the ϕ index and W-index, assume initial ϕ index is more than 1.4cm/hr

3	During November at certain place, the % of sunshine hours is 7.2 and mean temperature is 180C. If the consumptive use co-efficient of crop is 0.7 for that month, find the consumptive use or ET of crop in mm/day using Blaney-Criddle Method	[10M]	CO2	L3
4	Define the term infiltration capacity of a soil. Explain the Horton's infiltration capacity curve, with a neat sketch.	[10M]	CO2	L3

5 The average water spread areas that are likely to be maintained during the operation of a reservoir after its completion and the observed monthly pan evaporation at a proposed reservoir site are given bellow.

Month	Jan	Feb	March	April	May	June	July	Aug	Sep	Oct	Nov	Dec
Average water spread area in ha.	872	797	754.5	739.5	726	717.5	735	765	807.5	850	891	917
Pan Evaporation in cm	10.2	15.3	25.4	30.5	28	17.8	15.3	14	14	15.3	12.7	10.2

Estimate the annual evaporation loss from the reservoir in million m^3. If 75% of this loss can be prevented and the water thus saved is utilized to irrigate a crop with a requirement of 57cm of water. How much area can be irrigated? Assume a pan co-efficient of 0.70.

[10M]   CO2   L3

Signature of CI   Signature of CCI   Signature of HOD