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Reg. No: | | | | | | | | | | | |

SIDDHARTH INSTITUTE OF ENGINEERING & TECHNOLOGY:: PUTTUR
(AUTONOMOUS)
B.Tech III Year I Semester Supplementary Examinations August-2021
HYDROLOGY & WATER RESOURCES ENGINEERING
(Civil Engineering)

Time: 3 hours   Max. Marks: 60

PART-A
(Answer all the Questions **5 x 2 = 10** Marks)

1	a	What is the mean by surface run-off?	2M
	b	What is meant by specific retension?	2M
	c	What is water requirement of crop?	2M
	d	What is flood routing?	2M
	e	Classify dams according to hydraulic design.	2M

PART-B
(Answer all Five Units 5 x 10 = 50 Marks)

UNIT-I

2   Explain types and forms of precipitation.   **10M**

OR

3   The ordinates of a 6-h unit hydrograph are given a storm had 3 successive 6-h intervals   **10M** of rainfall magnitude of 3, 5 and 4 cm respectively. Assuming an Φ-index of 0.23cm/hr and a base flow of 30m^3/s. Determine the resulting hydrograph.

Time In hour	0	6	12	18	24	30	36	42	48
Ordin ate of 6-hr U.H(m^3/s)	0	250	600	800	700	600	450	320	200

UNIT-II

4	a	What do you understand from Darcy's law, hydraulic gradient, and seepage velocity?	4M
	b	With a neat sketch, explain Dupuit's theory for confined aquifer?	6M

OR

5	a	Explain the necessity and importance of Irrigation.	6M
	b	Enumerate in detail about factor affecting duty of irrigation water.	4M

UNIT-III

6   A watercourse commands an irrigation area 1000 hectares. The intensity of irrigation of   **10M** rice in this area is 70%. The transplantation of rice crop takes 15 days and during the transplantation period the total depth of water required by crop on field is 500mm. during transplantation period, the useful rainwater falling on field is 120mm. Find during transplantation, at head of field and at head of watercourse. Also, calculate the discharge required in watercourse.

OR

7   Explain with neat sketch about the types of fall in dam irrigation.   **10M**

UNIT-IV

8   Explain the different types of zones of storages in the reservoir with the help of neat   **10M** sketch.

OR

9 a Write a procedure for calculation of life of a reservoir   5M
   b Write the calculation of determination of safe yield from reservoir.   5M

UNIT-V

10 Classify all the various classifications of dams according to use in detail with sketches.   10M

OR

11 a Explain with sketch about galleries in gravity dam.   5M
   b Explain various modes of failure of a gravity dam.   5M

END