R16

Reg. No:

SIDDHARTH INSTITUTE OF ENGINEERING & TECHNOLOGY:: PUTTUR
(AUTONOMOUS)
B.Tech II Year II Semester Regular Examinations May 2019
HYDROLOGY
(Agriculture Engineering)

Time: 3 hours　　　　　　　　　　　　　　　　　　　　　　　Max. Marks: 60

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

UNIT-I

1　a What do you understand by precipitation? Explain different forms of precipitation.　6M

　b The Normal Annual Rainfall at stations A, B, C, and D in a basin are 80.97, 67.59, 76.28 and 92.01 cm respectively. In the Year 1985, the Station D was inoperative and stations A, B and C recorded annual precipitation of 91.11, 72.23 and 79.89 cm respectively. Estimate the rainfall at station D in that year　6M

OR

2　a Define the term "Infiltration". Describe the factors affecting for infiltration rates.　7M

　b Explain briefly about infiltration indices.　5M

UNIT-II

3　a Explain SCS-CN Method of Estimating Runoff Volume.　6M

　b Given below are the ordinates of 4-hr unit hydrograph for a catchment. Calculate the 12hr ordinatesfor the same catchment.

Time(hr)	0	4	8	12	16	20	24	28	32	36	40	44
UH ordinate (m^3/s)	0	20	80	130	150	130	90	52	27	15	5	0

6M

OR

4 Explain about the Stage- Discharge Relationship in Stream flow Measurement.　12M

UNIT-III

5　a Explain the various methods of flood control in brief.　6M

　b The mean annual flood of a river is 600 m^3/s and the standard deviation of the annual flood series is 150 m^3/s . What is the Probability of a flood of magnitude 1000 m^3/s occurring in the river within next 5 years? Use Gumbel's Method.　6M

OR

6　a Explain about the Drought Management in India. List the major Drought areas in India.　6M

　b Explain about NDVI analysis in Drought Management.　6M

UNIT-IV

7　a What is meant by a Reservoir. Explain the various types of Reservoirs.　7M

　b Explain the Life of a Reservoir.　5M

OR

8　a Explain the Various Storage Zones of the dam Reservoir.　7M

　b What is the Relation between "Reservoir Capacity" and "Reservoir Yield".　5M

UNIT-V

9　a Explain the Properties of Aquifer.　6M

　b A 30 cm diameter well completely penetrates a confined aquifer of Permeability 45 m/day. The length of the strainer is 20 m. Under steady state of pumping, the drawdown at the well was found to be 3 m and the radius of influence was 300 m . Calculate the discharge.　6M

OR

10　a What is Rain Water Harvesting. List the techniques involved for Rain Water Harvesting in both Rural and Urban Areas.　12M

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