Q.P. Code:16CE120 **R16**

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

SIDDHARTH INSTITUTE OF ENGINEERING & TECHNOLOGY:: PUTTUR

(AUTONOMOUS)

B.Tech III Year I Semester Supplementary Examinations November-2020

WATER RESOURCES ENGINEERING-I

(Civil Engineering)

Time: 3 hours Max. Marks: 60

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

UNIT-I

1 Explain any one type of automatic rain gauge with neat sketch. **12 M**

OR

2 Estimate the mean precipitation by Isohyetal method **12 M**

Method Isohyetes (cm)	15	19	22	27	32	40
Area between Isohyetes (Km^2)	-	8	13	17	21	27

UNIT-II

3 **a** What is hydrograph? Draw a single peaked hydrograph and explain its components. **6M**

b What do you understand by infiltration index? How do you determine it? **6M**

OR

4 The rate of rainfall for successive 30 minutes periods of a 4-hour storm are as follow: 3.5, 6.5, 8.5, 7.8, 6.4, 4.0, 4.0, 6.0 cm/hr. Taking a value of Ø- Index as 4.5 cm/hr compute the following: i) Total Rainfall ii) Total Rainfall Excess & iii) W_i. **12 M**

UNIT-III

5 Explain the method of determining the coefficient of transmissibility of a confined aquifer by pumping out test. How can this method be extended for unconfined aquifer? **12 M**

OR

6 Define A well penetrates fully of 10 m thick water bearing stratum of medium sand having coefficient of permeability 0.005 m/sec. The well radius is 10 cm and is to be worked under a drawdown of 4 m at the well face. Calculate the discharge from the well. What will be the percentage increase in the discharge if the radius of the well is doubled? Take R=300 m in each case. **12 M**

UNIT-IV

7 Write notes on the following

a Saturation capacity **6M**

b Field capacity **6M**

OR

8 **a** What do you understand by crop rotation? What are its advantages? **6M**

b Explain the assessment of irrigation water. **6M**

UNIT-V

9 **a** Explain Lacey's silt theory. **6M**

b Using Kennedy's theory, design a channel section for the following data: Discharge, Q=14 cumecs, Kutters (N)= 0.0225,Crticial velocity ratio (m)=1, Side slope 0.5:1, Bed slope= 1/5000. **6M**

OR

10 Compare Kennedy's and Lacey's theories in detail. **12 M**

*** END ***