R20 Regulation *Subject code: 3P6AD*

TKR COLLEGE OF ENGINEERING AND TECHNOLOGY

(Autonomous, Accredited by NAAC with 'A+' Grade)

B.Tech VI Semester Supplementary Examinations, November 2025

WATER RESOURCE ENGINEERING-I

(CE)

Maximum Marks: 70 Date:13.11.2025 Duration: 3 hours

Note: 1.This question paper contains two parts A and B.
2. Part A is compulsory which carries 20 marks. Answer all questions in Part A.
3. Part B consists of 5 Units. Answer any one full question from each unit.
4. Each question carries 10 marks and may have a, b, c, d as sub questions.

Part-A

All the following questions carry equal marks (10X2M=20 Marks)		Marks	CO	BTL
1	Draw Hydrological cycle and write about its terms.	2M	1	L1
2	What is transpiration and how do you measure?	2M	1	L1
3	What is influent stream and effluent stream?	2M	2	L1
4	What is S-curve method?	2M	2	L1
5	What is Aeration zone and saturation zone? Draw it's diagram.	2M	3	L1
6	How do you develop a well?	2M	3	L1
7	Write the principal crops in india based on it's seasons.	2M	4	L1
8	Determine the delta for a crop if the duty for a base period 120 days is 1500 hect/cumec.	2M	4	L1
9	What are the typical cross sections of canals.	2M	5	L1
10	Write the Kutter's formula for determining the mean velocity of flow in a channel.	2M	5	L1

Part-B

Answer All the following questions. (5X10M=50Marks)		Marks	CO	BTL
11	Explain the different types of rain gauges used for the measurement of rainfall with it's sketch.	10M	1	L2
	OR			
12	What is evaporation? Explain the different factors on which the rate of evaporation depends.	10M	1	L2
13	a. What are the uses and limitations of unit hydrograph? b. A drainage basin has an area of 3800 sq. km. determine i) Lag period ii) Peak discharge iii) Base period Of a 9-hour unit hydrograph from the following data. L= 320 km, Lca= 200 km, Ct= 0.9, Cp=4.0.	4M 6M	2	L2
	OR			
14	Explain the different factors which affect flood hydrograph.	10M	2	L2

15	Explain briefly the occurrence of ground water with the help of neat sketches.	10M	3	L2
	OR			
16	What are the aquifer parameters? Explain in brief.	10M	3	L2
17	a. What is irrigation? What are the methods of irrigation? b. What are the methods of improving soil fertility.	5M 5M	4	L2
	OR			
18	a. Wheat is to be grown in a field having a field capacity of 27% and the permanent wilting point is 13%. Find storage capacity per m depth of soil if the unit weight of soil is 1.5 gm/cc. readily available moisture may be taken as 80% of the available moisture. Find the water depth required to be supplied to the field if the field application efficiency is 80%. What is the amount of water needed at the outlet if water lost in water course is 15% of outlet discharge. b. Write about soil-water-plant relationship with the help of neat sketch.	5M 5M	4	L2
19	What is canal? Explain in brief the classification of canals.	10M	5	L2
	OR			
20	What are the types of canal linings.	10M	5	L2