Regulation: R18 *Subject code: 2P6AD*

TKR COLLEGE OF ENGINEERING AND TECHNOLOGY

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

B.Tech VI Semester Supplementary Examinations, February 2024

HYDROLOGY AND WATER RESOURCE ENGINEERING

(Civil Engineering)

Maximum Marks: 70 Date: 22.02.2024 **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)	CO	Bloom Tx
1	What is Evaporation?	CO1	L1
2	What are the factors effecting Evaporation.	CO1	L1
3	What is unit hydrograph?	CO2	L1
4	Write limitation of unit hydrograph.	CO2	L1
5	What is Darcy's law?	CO3	L1
6	Write discharge formulas for confined and unconfined aquifers.	CO3	L1
7	What are the types of Irrigation?	CO4	L1
8	Write any two Irrigation efficiencies.	CO4	L1
9	What is canal lining?	CO5	L1
10	Write four advantages of canal lining.	CO5	L1

Part-B

	Answer All the following questions. (5X10M = 50 Marks)		
11	What are the 3 methods of estimating average rainfall? Explain in brief. [10]	CO1	L1
	OR		
12	What is run off? Explain the factors affecting run off from a catchment. And also write it's empirical and rational formulae. [10]	CO1	L2
13	What is a hydrograph? Draw a single peaked hydrograph and explain its components. [10]	CO2	L2
	OR		
14	Explain various methods of determining flood discharge in a stream. [10]	CO2	L2
15	a) Define the following terms: [5] Aquiclude, specific yield, porosity, permeability. b) Design an open well in fine sand to give a discharge of 0.003 cumecs when worked under a depression head of 2.5 metres. [5]	CO3	L2 L3
	OR		
16	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. [10]	CO3	L2
17	a) Distinguish between perennial and inundation irrigation. [5]	CO4	L2

	b) Explain the factors affecting duty of water. [5]		L2
	OR		
18	a) What are the methods of improving soil fertility? [5] b) Derive the relation between duty, delta and base period. [5]	CO4	L1 L2
19	Design an irrigation channel on kennedy's theory, to carry a discharge of 45 cumecs. Take N = 0.0225 and m = 1.05. the channel has a bed slope of 1 in 5000. [10]	CO5	L3
	OR		
20	Explain design procedure for a channel by Lacey's regime theory. [10]	CO5	L2