



R20 Regulation

Subject code:3P6AD

TKR COLLEGE OF ENGINEERING AND TECHNOLOGY

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

B.Tech VI Semester Supplementary Examinations, December 2024

WATER RESOURCE ENGINEERING-I (Civil Engineering)

Maximum Marks: 70

Date:04.01.2025

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 which carries 10M.
 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 hydrologic cycle?	1	L1
2	What are the different types of rain gauges?	1	L1
3	What is runoff?	2	L1
4	What is flood hydrograph?	2	L1
5	Write about any two aquifer parameters	3	L1
6	What are the different methods of development of well.	3	L1
7	Write the types of irrigation	4	L1
8	Find the duty of a crop which required a total depth 800mm of water for a bases period of 120 days.	4	L1
9	Name the classification of canals.	5	L1
10	Write any four drawbacks of Lacey's theory.	5	L1

Part-B

Answer All the following questions. (5X10M=50Marks)		CO	Bloom Tx																		
11	The average rainfall over 45 hec of watershed for a particular storm was as follows; <table><tr><td>Time(hr)</td><td>0</td><td>1</td><td>2</td><td>3</td><td>4</td><td>5</td><td>6</td><td>7</td></tr><tr><td>Rainfall(cm)</td><td>0</td><td>0.5</td><td>1.0</td><td>3.25</td><td>2.5</td><td>1.5</td><td>0.5</td><td>0</td></tr></table> The volume of runoff from this storm was determined as 2.25 ha-m. Establish the ϕ- index. (10M)	Time(hr)	0	1	2	3	4	5	6	7	Rainfall(cm)	0	0.5	1.0	3.25	2.5	1.5	0.5	0	1	L2
Time(hr)	0	1	2	3	4	5	6	7													
Rainfall(cm)	0	0.5	1.0	3.25	2.5	1.5	0.5	0													
	OR																				
12	A) Define Infiltration and what is the measurement of infiltration. (5M) B) Explain the different factors which affect infiltration. (5M)	1	L2																		
13	What is runoff? Write about factors affecting runoff. (10M)	2	L2																		
	OR																				
14	What is unit hydrograph? Write its limitations and applications. (10M)	2	L2																		
15	Differentiate between unconfined and confined aquifer. Describe the zones of underground water. (10M)	3	L2																		

	OR		
16	Write short notes on, i) Specific capacity of a well and specific yield of an aquifer ii) Aquifer and aquiclude iii) Open wells and tube wells iv) Water table and artesian aquifer. (10M)	3	L2
17	A) What is irrigation? what are the methods of irrigation? (5M) B) What are the methods of improving soil fertility. (5M)	4	L2
	OR		
18	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. (10M)	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