



B.Tech VI Semester Supplementary Examinations, July 2024
HYDROLOGY AND WATER RESOURCE ENGINEERING
(CE)

Maximum Marks: 70

Date:26.07.2024 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 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 Infiltration?		1	L1
2	Write four factors affecting infiltration.		1	L1
3	What is S-hydrograph?		2	L1
4	What is synthetic unit hydrograph?		2	L1
5	What is Well?		3	L1
6	Write about the two types of wells.		3	L1
7	Write about Duty, Delta and Base period.		4	L1
8	What is water logging?		4	L1
9	Write five necessity of canal lining.		5	L1
10	Write four types of canal lining.		5	L1

Part-B

Answer All the following questions.		(5X10M=50Marks)		
11	With a neat sketch, explain the working of float type automatic rain gauge. (10M)		1	L2
OR				
12	What is infiltration? What are the measurements of infiltration? Write about infiltration indices. (10M)		1	L2
13	What is unit hydrograph? Write its limitations and applications of unit hydrograph. (10M)		2	L2
OR				
14	A 12 hour storm rainfall with the following depths in cm occurred over a basin: 2.0, 2.5, 7.6, 3.8, 10.6, 5.0, 7.0, 10.0, 6.4, 3.8, 1.4 and 1.4. The surface run-off resulting from the above storm is equivalent to 25.5 cm of depth over the basin. Determine the average infiltration index for the basin. (10M)		2	L2

15	Write about Darcy's law for radial flow to wells in confined and unconfined aquifers and draw its neat sketch. (10M)	3	L2
	OR		
16	What is well? How many types of well are their? Write its construction and development. (10M)	3	L2
17	What is irrigation? Write its advantages and disadvantages; also write its ill effects and importance. (10M)	4	L2
	OR		
18	What is soil- water- plant relationship? Write about vertical distribution of soil moisture in brief. (10M)	4	L2
19	The slope of channel in alluvium is $S = 1/5000$; Lacey's silt factor = 0.9 and channel side slope = $1/2:1$. Find the channel section and maximum discharge which can be allowed to flow in it. (10M)	5	L2
	OR		
20	Write the design procedure of irrigation canal using the Kennedy's theory. (10M)	5	L2