

GUJARAT TECHNOLOGICAL UNIVERSITY**BE- SEMESTER-IV (NEW) EXAMINATION – WINTER 2020****Subject Code:3144005****Date:15/02/2021****Subject Name:Water Resource Engineering & Hydrology****Time:02:30 PM TO 04:30 PM****Total Marks:56****Instructions:**

1. Attempt any FOUR questions out of EIGHT questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks

		MARKS
Q.1	(a) Write short note on water logging.	03
	(b) Enlist types of fall & explain any one in detail.	04
	(c) Explain in brief different type of forces acting on gravity dam.	07
Q.2	(a) Explain safe yield of reservoir.	03
	(b) Explain factors affecting duty.	04
	(c) What are different methods for estimation of average rainfall?	07
Q.3	(a) Define: 1) Full Reservoir Level 2) Dead Storage Level 3) Highest Flood Level.	03
	(b) Give causes of water logging.	04
	(c) Design an irrigation channel for following data using Lacey's theory. $Q = 20$ cumecs & Silt factor = 1.0	07
Q.4	(a) Explain Muskingum method for flood routing.	03
	(b) Explain base flow separation in detail.	04
	(c) Design an irrigation channel to carry a discharge of 30 cumecs by Kennedy theory. Take B/D ratio as 8.0 , $N=0.025$ & $m=1$	07
Q.5	(a) Explain flood routing & enlist methods of it.	03
	(b) Give classification of crops based on crop seasons.	04
	(c) Describe cross drainage works. Describe briefly the type of cross drainage works with sketch.	07
Q.6	(a) Explain causes of reservoir sedimentation.	03
	(b) Explain in short various methods of irrigation.	04
	(c) Give classification of canal based on function.	07
Q.7	(a) Enlist various kind of dams.	03
	(b) Explain various modes of failure for gravity dams.	04
	(c) Give factors for site selection of reservoir.	07
Q.8	(a) Explain side channel spillway in detail.	03
	(b) Give factors governing the selection of type of dam.	04
	(c) Give calculation to determine reservoir capacity from mass in flow curve.	07
