Seat No.: _____ Enrolment No._____

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**

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