Seat No.: _____ **Enrolment No._____**

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER–V (OLD) - EXAMINATION – SUMMER 2017

Subject Code: 150602 **Date: 12/05/2017**

Subject Name: Hydrology & Water Resources Engineering

Time: 02:30 PM to 05:00 PM **Total Marks: 70**

Instructions:

1. **Attempt all questions.**
2. **Make suitable assumptions wherever necessary.**
3. **Figures to the right indicate full marks.**

Q.1	**(a)**	Enlist various types of raingauges and discuss any one with neat sketch alongwith its advantages and disadvantages.	**07**
	(b)	Draw neat sketch of hydrologic cycle. Briefly discuss its various components.	**07**
Q.2	**(a)**	Classify the various types of precipitation and discuss each type in detail.	**07**
	(b)	Discuss the various factors affecting the infiltration process.	**07**
		OR	
	(b)	Write a short note on: (1) Measurement of evaporation by Lysimeter & (2) W-index	**07**
Q.3	**(a)**	Explain the procedure to derive unit hydrograph from given storm hydrograph.	**07**
	(b)	What is S-curve? Write the steps to prepare it and obtain equilibrium discharge.	**07**
		OR	
Q.3	**(a)**	Discuss confined and unconfined aquifer alongwith proper sketch.	**07**
	(b)	Differentiate between hyetograph and hydrograph.	**07**
Q.4	**(a)**	Enlist various types of reservoir and discuss any two of them.	**07**
	(b)	How would you control the sedimentation of reservoirs?	**07**
		OR	
Q.4	**(a)**	Write atleast one use of following components: Penstock, trashrack, tailrace, draft tube, surge tank, turbine, forebay	**07**
	(b)	Explain the flood mitigation by levees, channel improvement and flood walls.	**07**
Q.5	**(a)**	What do you mean by flood routing? Discuss the method of channel routing.	**07**
	(b)	Explain the functional requirements of water resources projects.	**07**
		OR	
Q.5	**(a)**	Define the term draught. Classify and discuss various types of draught.	**07**
	(b)	Enumerate various methods of flood estimation and explain any two in detail.	**07**

****