

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**

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