

GUJARAT TECHNOLOGICAL UNIVERSITY**BE – SEMESTER V • EXAMINATION – WINTER - 2012****Subject code: 150602****Date: 12-01-2013****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) What is unit hydrograph ? How it is constructed ? Write assumptions and limitations of the unit hydrograph. **07**

(b) What is difference between hyetograph and hydrograph. **07**

Q.2 (a) Describe various methods of computing average rainfall over a basin **07**

(b) Define evapotranspiration and explain how it is measured. **07**

OR

(b) Define ground water hydrology and explain occurrence of ground water. **07**

Q.3 (a) Write the empirical formulas for ground water velocity determination and explain Darcy's law for that velocity. **07**

(b) What are the direct practical tests to estimate the yield of the aquifer ? Explain each in brief. **07**

OR

Q.3 (a) Describe well losses and specific capacity of the well. **07**

(b) Explain the mass curve method that can be used for determining reservoir capacity. **07**

Q.4 (a) Explain reservoir sedimentation. How do you estimate the probable life of a reservoir. **07**

(b) Write a note on water harvesting. **07**

OR

Q.4 (a) Explain functional requirements of water resources projects. **07**

(b) What are the different methods of flood routing ? Describe the graphical method. **07**

Q.5 (a) Explain flood frequency analysis. **07**

(b) Write principal components of hydroelectrical scheme and explain each in brief. **07**

OR

Q.5 (a) Describe various types of hydel schemes. **07**

(b) What is flood management ? Explain flood damage analysis. **07**
