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

GUJARAT TECHNOLOGICAL UNIVERSITY

ME Semester –I Examination Feb. - 2012

Subject code: 711202N **Date: 13/02/2012**
Subject Name: Hydrology and Watershed Management
Time: 10.30 am – 01.00 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)**	Explain Gumbel's method in detail	**07**
	(b)	A flood of a certain magnitude has a return period of 40 years a) What is its probability of exceedance? b) what is the probability that this flood may occur at Least once in the next 18 years?	**07**
Q.2	**(a)**	Distinguish between Maximum probable flood and standard project flood.	**07**
	(b)	Explain the California method of flood frequency analysis.	**07**
		OR	
	(b)	What return period you would adopt in the design of a dam if you are allowed to accept only 6 % risk of flooding in 30 years of expected life of the dam.	**07**
Q.3	**(a)**	Explain the channel routing by Muskingum method	**07**
	(b)	Discuss the factors affecting run-off from basin area.	**07**
		OR	
Q.3	**(a)**	Define and explain (1) Ø-Index (2) W-Index	**07**
	(b)	Explain in detail unit hydrograph theory	**07**
Q.4	**(a)**	Discuss the different types of treatments applied to watersheds and it's expected outputs	**07**
	(b)	Explain the different methods for evaporation control from reservoir.	**07**
		OR	
Q.4	**(a)**	Explain the Reservoir routing by Modified pul's method.	**07**
	(b)	Explain the various methods for separation of base flow.	**07**
Q.5	**(a)**	Explain Synder's method for synthetic unit hydrograph	**07**
	(b)	Discus the factors affecting infiltration capacity	**07**
		OR	
Q.5	**(a)**	Discuss the methods for evaporation control from a reservoir.	**07**
	(b)	Explain Nash's model in detail.	**07**

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