Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

M.E Sem-I Remedial Examination April 2010

Subject code: 711202

Subject Name: Hydrology & Watershed Management

Date: 07 / 04 / 2010 **Time: 12.00 noon – 02.30 pm**

Total Marks: 60

Instructions:

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

Q.1	**(a)**	Explain depth area duration curve	**06**
	(b)	Explain in detail Modified Pul's method	**06**
		OR	
	(b)	A Coffer dam is designed for a 25 year flood and constructed. If it takes 5 years to complete the construction of main dam, what is the risk that the coffer dam may fail before the end of the construction period? what return period in the design of coffer dam would have reduced the risk to 10 %?	**06**
Q.2	**(a)**	How does instantaneous unit hydrograph differs from unit hydrograph of finite duration?	**06**
	(b)	Discuss the factors affecting Infiltration capacity.	**06**
		OR	
	(b)	Explain channel routing by Muskingum Method	**06**
Q.3	**(a)**	Explain California method of flood frequency analysis	**06**
	(b)	Define: 1) Probable maximum flood. 2) Recurrence interval. 3) bank storage	**06**
		OR	
Q.3	**(a)**	Discuss the different types of treatments applied to watershed and its expected outputs	**06**
	(b)	Define: 1) W-index 2) Ø-index 3) Surcharge storage	**06**
Q.4	**(a)**	Discuss the various factors affecting run-off.	**06**
	(b)	Explain Clerk's Model	**06**
		OR	
Q.4	**(a)**	How the evaporation losses from the reservoir can be controlled?	**06**
	(b)	Explain Nash Model	**06**
Q.5	**(a)**	Explain the following terms; 1) Infiltration Capacity 2) Infiltration Indices 3) Infiltration rate.	**06**
	(b)	How the design flood is estimated? Discuss it.	**06**
		OR	
Q.5	**(a)**	Explain the synder's method for synthetic unit hydrograph.	**06**
	(b)	Explain Linear regression and Curvilinear regression	**06**

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