Seat No.:	Enrolment No.
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## GUJARAT TECHNOLOGICAL UNIVERSITY M. E. - SEMESTER – I • EXAMINATION – WINTER • 2013

	•	code: 711204N Date: 30-12-2013 Name: Water Resources Engineering	
Tir	ne: 1	10.30 am – 01.00 pm Total Marks: 70 etions:	
1118	1. 2.	Attempt all questions.  Make suitable assumptions wherever necessary.  Figures to the right indicate full mark.	
Q.1	(a) (b)	Discuss the factors affecting run-off from catchment area What is unit hydrograph? What are its applications?	07 07
Q.2	(a) (b)	Explain Gumbel's method in detail.  Describe temporal and spatial variability in hydrology with suitable exemplary data	07 07
		OR	
	<b>(b)</b>	Define and explain 1)Time of concentration(tc) 2) Recession time(tr) 3) Basin Lag(tp)	07
Q.3	(a) (b)	Define and explain(1) Ø-Index(2)W-Index in detail Discuss the factors affecting infiltration capacity  OR	07 07
Q.3	(a)	What is watershed management? And why it is considered as a basic scientific unit for water resources planning and management?	07
	<b>(b)</b>	Describe the salient characteristics of on India.	07
Q.4	(a)	The following records of maximum food are available. Estimate the magnitude of flood having frequency equal to 100 years and 250 years by Gumbel's method. Records collected from 1991 to 2004 are 3000, 4330, 6170, 3390, 2770, 3770,3330,6670,5320,3670,8970,4170,3670,5270 Cumecs.	07
	<b>(b)</b>	Distinguish between 1) Flood Frequency and Recurrence interval 2) Maximum probable flood and standard project flood.3) Prism storage and wedge storage.  OR	07
Q.4	(a) (b)	Explain in detail the Muskingham method for river routing. Write short note on "Watershed Management."	07 07
Q.5	(a)	Explain with neat sketch storage zones of a reservoir.	07
	<b>(b)</b>	Discuss the causes of sedimentation in reservoir. How will you control them?  OR	07
Q.5	(a) (b)	What are the environmental issues in water resources project? Explain in detail reservoir routing by Modified Pulse method.	07 07

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