Seat No.:	Enrolment No.

Subject Code:X30601

GUJARAT TECHNOLOGICAL UNIVERSITY

PDDC - SEMESTER-III EXAMINATION – SUMMER 2016

Date:26/05/2016

	-	et Name:Hydrology And 02:30 PM to 05:00 PM	W	ater	Res	sour	ces	Eng	ine	7	_	-1 N/	onka 70	
	ime:v struct										101	di IVI	arks: 70	
TH.	1	 Attempt all questions. Make suitable assumptions Figures to the right indicat 				cessar	·y.							
Q.1	(a)	discussing its scope											0	
	(b)												0	
Q.2	(a) (b)	Explain in detail the types of precipitation which are formed in nature. Determine the optimum number of rain gauges in a catchment area from the following data: 1) Number of existing rain gauges=8 2) Mean annual rainfall at the gauges = 1000, 950, 900, 850, 800, 700, 600, and 400 mm 2) Powerissible or respective.												
		3) Permissible error=6% OR												
	(b)	Find the average annual rain				•							0	
		Area enclosed between isol Isohyets	ohyets sq. km			220 25-5	_	380 50-75	_	250 200 75-100 100-12			25	
Q.3	(a)	Describe how infiltration cap Infiltrometer.	l.							0				
	(b)	What is Run-off? What are t	he fa	actor			ct tł	ne run	-off	from	a Ba	sin?	0	
Q.3	(a)	OR For a storm of 3 hour durations, the rainfall rates are as follows 0												
Q.S	(b)	Time period (minute) 30 30 30 30 30 30 30 Rainfall rate (cm/hour) 3.5 3.0 12.0 8.5 6.0 1.5 If φ- Index is 5 cm/hour, estimate the surface runoff. Also determine W-Index												
	Ordinates of a 6-hr. unit hydrograph for the same basin.										105			
		Time in hours Ordinates of 3hour unit hydrograph (cumecs)	0	10	25	9 20	12 16	-	9	7	5	3	0	
Q.4	(a) (b)													
Q.4	(a) (b)	Explain Gumbel's method in detail?												
Q.5	(a) (b)	Define Darcy's law. What are its limitations? Explain with neat sketches storage zones of reservoir. OR												
Q.5	(a) (b)	What is evapotranspiration? Discuss factors affecting it. Write a short note on flood control. ***********************************												

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