Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

M. E. - SEMESTER – III • EXAMINATION – SUMMER • 2013

Subject code: 731201 **Date: 13-05-2013**

Subject Name: Water Supply and Drainage

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)**	State the importance and necessity of water supply scheme.	**07**
	(b)	Briefly describe various types of service reservoir.	**07**
Q.2	**(a)**	Discuss the different factors which are taken into con during the preparation of a water supply project.	**07**
	(b)	Briefly discuss various factors affecting losses and wastes in the distribution system.	**07**
		OR	
	(b)	Describe the possible source of water for public water supply for a city. What are the factors which govern the final choice of the source?	**07**
Q.3	**(a)**	What are intakes? What points should be kept in mind while selecting a site for intake works?	**07**
	(b)	Write a note on 'Radial Collector Well'.	**07**
		OR	
Q.3	**(a)**	What factors affect the design of an intake structure? Describe a river intake with the help of a neat sketch.	**07**
	(b)	Describe any one device used for measurement of flow of water in pipe lines.	**07**
Q.4	**(a)**	Write short note on 'Hardy-Cross Method'.	**07**
	(b)	Describe the circumstances under which pumping of water is required.	**07**
		OR	
Q.4	**(a)**	Classify pumps. Describe impulse pump; also state its advantages and disadvantages.	**07**
	(b)	Write short notes on (i) Sluice Valves (ii) Pressure Relief Valves.	**07**
Q.5	**(a)**	How would you estimate the quantity of Storm-Water? Explain the importance of time of concentration in storm run-off studies.	**07**
	(b)	A sewer, 30 cm in diameter is laid at a gradient of 1 100. Using N= 0.013 in manning's formula, calculate the velocity, discharge and Chezy's co-efficient when the sewer is running full.	**07**
		OR	
Q.5	**(a)**	How the water consumed by the consumers is measured? Describe any suitable device for it.	**07**
	(b)	Give various empirical formulae for determining storm flow in sewers, explain their applicability or suitability.	**07**

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