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

GUJARAT TECHNOLOGICAL UNIVERSITY

ME - SEMESTER–IV • EXAMINATION– WINTER • 2015

Subject Code: 741201 **Date: 05/12/2015**

Subject Name: HYDROLOGICAL MODELING

Time: 2:30 PM TO 5:00 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)**	Write objectives of the groundwater models.	**07**
	(b)	What is simulation? Explain history of simulation in brief.	**07**
Q.2	**(a)**	Name the different packages of simulation. Explain ARS-SWAT in brief.	**07**
	(b)	Describe HEC-HMS model.	**07**
		OR	
	(b)	Explain modeling for surface water system.	**07**
Q.3	**(a)**	Differentiate between analytical solution and numerical solution for steady flow of unconfined aquifer.	**07**
	(b)	Write short note on genetic algorithm.	**07**
		OR	
Q.3	**(a)**	Explain inverse modeling in groundwater flow.	**07**
	(b)	Describe USGS regression models for urban watersheds.	**07**
Q.4	**(a)**	Compare the analog simulation and digital simulation.	**07**
	(b)	What are the statistical models? Describe any one in detail.	**07**
		OR	
Q.4	**(a)**	Explain goodness of fit with objectives.	**07**
	(b)	Distinguish between discrete and continuous random variables.	**07**
Q.5	**(a)**	Explain identifying distribution.	**07**
	(b)	Describe measures of performance.	**07**
		OR	
Q.5	**(a)**	Describe calibration and validation of the models.	**07**
	(b)	Explain output analysis.	**07**

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