Seat No.:	Enrolment No.

GUJARAT TECHNOLOGICAL UNIVERSITY

M. E. - SEMESTER – II • EXAMINATION – WINTER • 2014

Subject code: 1721201		code: 1721201 Date: 02-12-2014	
	•	Name: Ground Water Management	
		2:30 pm - 05:00 pm Total Marks: 70	
Ins		tions:	
		Attempt all questions. Make suitable assumptions wherever necessary.	
		Figures to the right indicate full marks.	
Q.1	(a) (b)	Define groundwater flow and explain contaminant transport process in brief. What do you understand by aquifer recharge? Explain various methods of artificial recharge for the aquifers.	07 07
Q.2	(a) (b)	What is well hydraulics? Describe different types of wells in brief. Write short note on interference among wells. OR	07 07
	(b)	Explain construction and maintenance of the wells.	07
Q.3	(a) (b)	Describe various methods of groundwater investigation in brief. Explain different types of aquifers with help of sketches. OR	
Q.3	(a) (b)	Explain the potential sources of the groundwater contaminant. What is sustainable water balance? Explain groundwater management strategies.	
Q.4	(a) (b)	Derive non equilibrium formula for aquifers. Define the following terms: (i) Transmissibility (ii) Groundwater yield (iii) Coefficient of storage (iv) Well loss (v) Efficiency of well (vi) Permeability. OR	07 07
Q.4	(a) (b)	Explain multiple well systems. What are the methods for prevention of seawater intrusion in coastal aquifers?	07 07
Q.5	(a)	Derive the equation to establish the relation between length of the interface and outflow to the sea in unconfined coastal aquifer.	
	(b)	Derive the Thiemøs formula for confined aquifer. OR	07
Q.5	(a) (b)	Explain movement of groundwater and determine groundwater velocity. Write short note on recuperating test and derive equation for the specific capacity of the open well(specific yield).	07 07
