

GUJARAT TECHNOLOGICAL UNIVERSITY**M. E. - SEMESTER – II • EXAMINATION – WINTER • 2014****Subject code: 1721201****Date: 02-12-2014****Subject Name: Ground Water Management****Time: 02:30 pm - 05:00 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) Define groundwater flow and explain contaminant transport process in brief. **07**
(b) What do you understand by aquifer recharge? Explain various methods of artificial recharge for the aquifers. **07**
- Q.2** (a) What is well hydraulics? Describe different types of wells in brief. **07**
(b) Write short note on interference among wells. **07**
- OR**
- (b) Explain construction and maintenance of the wells. **07**
- Q.3** (a) Describe various methods of groundwater investigation in brief. **07**
(b) Explain different types of aquifers with help of sketches. **07**
- OR**
- Q.3** (a) Explain the potential sources of the groundwater contaminant. **07**
(b) What is sustainable water balance? Explain groundwater management strategies. **07**
- Q.4** (a) Derive non equilibrium formula for aquifers. **07**
(b) Define the following terms : **07**
(i) Transmissibility (ii) Groundwater yield (iii) Coefficient of storage
(iv) Well loss (v) Efficiency of well (vi) Permeability.
- OR**
- Q.4** (a) Explain multiple well systems. **07**
(b) What are the methods for prevention of seawater intrusion in coastal aquifers? **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. **07**
(b) Derive the Thiem's formula for confined aquifer. **07**
- OR**
- Q.5** (a) Explain movement of groundwater and determine groundwater velocity. **07**
(b) Write short note on recuperating test and derive equation for the specific capacity of the open well (specific yield). **07**
