

**GUJARAT TECHNOLOGICAL UNIVERSITY**  
**BE – SEMESTER – VI (NEW).EXAMINATION – WINTER 2016**

**Subject Code: 2161307****Date: 26/10/2016****Subject Name: Ground Water Contamination****Time: 02:30 PM to 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)** What is ground water? Discuss formation of ground water with neat sketch. **07**
- (b)** Enlist and explain ground water remediation methods. **07**
- Q.2 (a)** Define the following terms. **07**
- (1) Confined aquifer (2) Unconfined aquifer (3) Aquiclude (4) Aquifuge  
(5) Aquitard (6) Leaky aquifer (7) Perched aquifer
- (b)** Write down the ground water quality criteria for drinking water. **07**
- OR**
- (b)** Explain in detail ground water sampling. **07**
- Q.3 (a)** Explain the Darcy's law. What is its limitation? Discuss its validity. **07**
- (b)** Explain in detail interference among wells. **07**
- OR**
- Q.3 (a)** Write down the application of Darcy's law for simple flow system. **07**
- (b)** Explain in detail how to monitor ground water quality. **07**
- Q.4 (a)** Derive the differential equation for Confined aquifer. **07**
- (b)** Explain in detail steady & unsteady flow solution for fully penetration wells. **07**
- OR**
- Q.4 (a)** Derive the differential equation for Unconfined aquifer. **07**
- (b)** Explain in detail steady & unsteady flow solution for Partial penetration wells. **07**
- Q.5 (a)** Explain the different methods of waste water recharge for reuse. **07**
- (b)** Enlist the site selection criteria for Artificial recharge. **07**
- OR**
- Q.5 (a)** Explain Artificial recharge for "energy purpose". **07**
- (b)** Explain induced recharge method with their flow pattern. **07**