

Seat No.: _____

Enrolment No. _____

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER-VI (NEW) - EXAMINATION – SUMMER 2018

Subject Code:2161307

Date:08/05/2018

Subject Name:Ground Water Contamination

Time:10:30 AM to 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) Write down the hydrological properties of water bearing strata. **03**
(b) Describe the occurrences of ground water in unconfined & confined aquifer with neat sketch. **04**
(c) What is ground water? Discuss vertical distribution of ground water with neat Sketch. **07**
- Q.2** (a) Write the assumptions made in Dupuit's theory. **03**
(b) Explain the Darcy's law. What are its limitations? Discuss its validity. **04**
(c) Derive the equation for steady radial flow to well in unconfined aquifer. **07**
- OR**
- (c) Derive the equation for steady radial flow to well in confined aquifer. **07**
- Q.3** (a) Explain the pumping test to estimate the safe yield from an open well. **03**
(b) Distinguish between **04**
(1) Aquifer & Aquitard.
(2) Unconfined aquifer & a leaky aquifer
(c) Explain in detail different sources responsible for ground water pollution with causes. **07**
- OR**
- Q.3** (a) Difference between fully and partial penetrating wells. **03**
(b) Explain the following terms: (1) Porosity (2) Permeability (3) Transmissibility (4) Specific yield **04**
(c) Enlist and explain ground water remediation methods. **07**
- Q.4** (a) What is cone of depression? **03**
(b) Explain site selection criteria for artificial recharge. **04**
(c) What is artificial recharge? Explain different artificial recharge methods of ground water. **07**
- OR**
- Q.4** (a) Explain in detail method of images. **03**
(b) Explain in detail how to monitor groundwater quality **04**
(c) Write down the ground water quality criteria for drinking water. **07**
- Q.5** (a) Discuss in detail ground water budget. **03**
(b) Explain induced recharge method with their flow pattern. **04**
(c) Explain in detail ground water in hydrological cycle with neat sketch **07**
- OR**
- Q.5** (a) Explain in detail interference among wells. **03**
(b) Explain Artificial recharge for "energy purpose". **04**
(c) Write down the Indian & International standards for ground water quality **07**