

Seat No.: _____

Enrolment No. _____

GUJARAT TECHNOLOGICAL UNIVERSITY**BE - SEMESTER-VI(NEW) – EXAMINATION – SUMMER 2019****Subject Code:2161307****Date:21/05/2019****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.

			MARKS
Q.1	(a)	Define the following terms. (1) Confined aquifer (2) Unconfined aquifer (3) Porosity	03
	(b)	Distinguish between: Aquifer & Aquitard.	04
	(c)	Explain ground water in hydrological cycle with neat sketch.	07
Q.2	(a)	Write down the hydrological properties of water bearing strata.	03
	(b)	Explain Artificial recharge for “energy purpose”	04
	(c)	Derive governing differential equation of unsteady ground water flow in unconfined aquifer	07
		OR	
	(c)	Derive governing differential equation of unsteady ground water flow in confined aquifer	07
Q.3	(a)	Explain induced recharge method with their flow pattern.	03
	(b)	Explain in detail interference among wells.	04
	(c)	Explain the Darcy’s law. What is its limitation? Discuss its validity	07
		OR	
Q.3	(a)	What is cone of depression?	03
	(b)	Explain in detail method of images.	04
	(c)	Describe the occurrences of ground water in unconfined & confined aquifer with neat sketch.	07
Q.4	(a)	Explain the assumptions made in dupuit’s theory.	03
	(b)	Explain in detail different sources responsible for ground water pollution with causes.	04
	(c)	Write a short note on advective and dispersive transport mechanism.	07
		OR	
Q.4	(a)	Difference between fully and partial penetrating wells.	03
	(b)	Explain site selection criteria for artificial recharge.	04
	(c)	Explain the pumping test to estimate the safe yield from an open well.	07
Q.5	(a)	Discuss in detail ground water budget.	03
	(b)	Explain in detail how to monitor groundwater quality	04
	(c)	Write down the Indian & international standards for ground water quality.	07
		OR	
Q.5	(a)	Enlist Preventive measures for ground water pollution.	03
	(b)	Distinguish between : Unconfined aquifer & a leaky aquifer	04
	(c)	Enlist & explain ground water remediation methods.	07
