

GUJARAT TECHNOLOGICAL UNIVERSITY**BE - SEMESTER-V (NEW) EXAMINATION – SUMMER 2024****Subject Code: 3151311****Date: 16-05-2024****Subject Name: Groundwater Hydrology and 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.
4. Simple and non-programmable scientific calculators are allowed.

- Q.1** (a) What is Groundwater Pollution? **03**
(b) Explain with neat sketch vertical distribution Groundwater. **04**
(c) Describe various sources responsible for Groundwater pollution. **07**
- Q.2** (a) Define Permeability. **03**
(b) Draw neat sketch groundwater in Hydrological cycle. **04**
(c) Enlist and explain preventive measures for Groundwater pollution. **07**
- OR**
- (c) Derive equation for steady radial flow in unconfined aquifer. **07**
- Q.3** (a) What is Aquifer? **03**
(b) Differentiate between Groundwater and Surface water. **04**
(c) Describe Darcy's law and its validity. **07**
- OR**
- Q.3** (a) What do you mean by Groundwater Hydrology? **03**
(b) Explain interference among wells. **04**
(c) Derive equation for steady radial flow in confined aquifer. **07**
- Q.4** (a) Define Void ratio for soil. **03**
(b) Differentiate between aquifer, aquiclude, aquitard and aquifuge. **04**
(c) Explain various artificial recharge methods for Groundwater. **07**
- OR**
- Q.4** (a) What is Degree of Saturation? **03**
(b) Describe sampling and monitoring methods for Groundwater. **04**
(c) Enlist and explain site selection criteria for artificial recharge. **07**
- Q.5** (a) What do you mean by Artesian well? **03**
(b) Differentiate between Confined and Unconfined aquifer. **04**
(c) Discuss on seepage from Surface water. **07**
- OR**
- Q.5** (a) What do you mean by Field capacity? **03**
(b) Give classification of Groundwater. **04**
(c) Write a note on Test pumping analysis. **07**
