

Code No: RT42012D

R13**Set No. 1**

IV B.Tech II Semester Regular/Supplementary Examinations, April - 2018

GROUND WATER DEVELOPMENT AND MANAGEMENT**(Civil Engineering)****Time: 3 hours****Max. Marks: 70***Question paper consists of Part-A and Part-B**Answer ALL sub questions from Part-A**Answer any THREE questions from Part-B*

PART-A (22 Marks)

1. a) Discuss in detail about the leaky aquifers. [3]
- b) Under what circumstances a radial collector well can be most advantageously used? [4]
- c) Write short notes on well completion and well maintenance. [4]
- d) What are the measures to control sea water intrusion? [3]
- e) Distinguish between geophysical logging and resistivity logging. [4]
- f) Write short notes on basin management by conjunctive use. [4]

PART-B (3x16 = 48 Marks)

2. a) What are different types of aquifers? Draw neat sketches and explain [8]
- b) Explain non equilibrium equation developed by 'Theis' and also explain the solution for the same. [8]
3. a) Find the diameter of tube well made in a confined aquifer for the following data
Yield from the well = 0.2 cubic m /sec
Radius of Influence = 250m
Coefficient of Permeability = 56m/day
Drawdown = 5m; Thickness of aquifer = 25m [10]
- b) What are well screens? How do you decide length and slot size. [6]
4. Write short notes on following methods of well development
a) Mechanical surging using compressed air b) High velocity jetting of water
c) Over pumping and back washing d) Dispersing agents [16]
5. a) Explain in detail Concept of artificial recharge of groundwater. [8]
- b) Explain the Gayben-Herzberg relation for saline water intrusion [8]
6. a) Explain with the help of neat sketches, giving relevant equation: Electrical Resistivity method on the ground surface. [8]
- b) Explain important features of aerial photogrammetry in ground water exploration. [8]
7. a) Discuss the basic principles of groundwater modeling. [8]
- b) Write short notes on (i) Analog models (ii) digital models. [8]