

Code No: RT42012D

**R13****Set No. 1**

IV B.Tech II Semester Regular/Supplementary Examinations, April/May - 2019

**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*

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**PART-A (22 Marks)**

1. a) Write various assumptions of Dupuit's equation. [4]  
b) How do you develop a tube well by surging? [4]  
c) What do you mean by well completion? [4]  
d) Explain recharge mounds method. [3]  
e) Discuss about resistivity logging. [3]  
f) What are the different porous media models? Discuss. [4]

**PART-B (3x16 = 48 Marks)**

2. a) What is the significance of specific yield, porosity and specific retention in groundwater study? [8]  
b) Define storage coefficient and transmissivity. Explain how they describe the ground water movement. [8]
3. a) Explain about collector wells. [8]  
b) A well is to be drilled in a confined aquifer. Find its radius, given the field data below:  
Discharge from the well=600 lps  
Radius of zero drawdown=400 m  
Coefficient of permeability=85 m/day  
Drawdown=8 m  
Thickness of aquifer=40 m [8]
4. a) Discuss about percussion drilling and core drilling. [8]  
b) Explain the wash down method of installation of well screens, with neat sketch. [8]
5. a) Discuss the structure of fresh-salt water interference. [8]  
b) What is Ghyben-Herzberg relation between fresh and saline water? [8]
6. a) How Aerial photogrammetry techniques are used in ground water studies? [8]  
b) Explain seismic refraction method of exploration of ground water. [8]
7. a) What are features of a typical ground water basin management plan? [8]  
b) What do you mean by finite difference and finite element models? [8]