Code No: **R42013**

R10

Set No. 1

IV B.Tech II Semester Supplementary Examinations, April/May - 2019
GROUND WATER DEVELOPMENT AND MANAGEMENT
(Civil Engineering)

Time: 3 hours   Max. Marks: 75

Answer any FIVE Questions
All Questions carry equal marks
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1. a) Derive differential equation governing ground water flow in three dimensions. [8]
   b) Write short notes on specific yield and specific retention. [7]

2. a) Explain Chow's method of determining hydraulic properties of the aquifers through pumping test. [8]
   b) Discuss in detail about the leaky aquifers. [7]

3. a) Explain with the help of neat sketches of Electrical Resistivity method on the ground surface. [8]
   b) What are the uses of aerial photogrammety in groundwater explorations? [7]

4. a) Discuss in detail about the infiltration gallery. [7]
   b) Explain the features of a well design. [8]

5. a) Write short notes on the following with neat sketches:
      (i) Well completion
      (ii) Well maintenance. [8]
   b) Discuss how you will develop a tube well by surging , jetting of water and back washing [7]

6. a) Explain in detail Concept of artificial recharge of groundwater. [7]
   b) Explain in detail about flooding and recharge well methods. [8]

7. a) Discuss the structure of fresh – salt water interference and Ghyben-Herzberg relation between fresh and saline water. [10]
   b) What are the implications of saline water intrusion in aquifers? [5]

8. Discuss the following:
   a) Groundwater basin management
   b) Concepts of conjunctive use [15]