

Code: R7420102

R07

B.Tech IV Year II Semester (R07) Supplementary Examinations January 2014

GROUND WATER DEVELOPMENT AND MANAGEMENT

(Civil Engineering)

Time: 3 hours

Max Marks: 80

Answer any FIVE questions
All questions carry equal marks

- 1 (a) Explain vertical distribution of ground water.
(b) In a certain alluvial basin of 100 km^2 , 90 Mm^3 of ground water was pumped in a year and the ground water table dropped by about 5 m during the year. Assuming no replenishment estimate the specific yield of the aquifer. If the specific retention is 12% what is the porosity of the soil.
- 2 A well is located in a 25 m confined aquifer of permeability 30 m/day and storage coefficient 0.005. If the well is being pumped at the rate of 1750 lpm, calculate the draw down at a distance of 100 m and 50 m from the well after 20 h of pumping.
- 3 (a) Analyze the radial flow to a well penetrating an unconfined aquifer.
(b) Write short notes on:
(i) Well spacing.
(ii) Radius of influence.
- 4 (a) What are leaky aquifers?
(b) Explain the Thei's method.
- 5 Explain geophysical logging and resistivity logging.
- 6 Give the concept of artificial recharge of ground water. Also explain any two methods of artificial recharge.
- 7 What is meant by sea water intrusion? How do you control the same?
- 8 How do you manage a basin with respect to ground water?
