

(3 Hours)

[Total marks: 80]

**Note:**

- 1) Attempt any four questions out of six questions.
- 2) Assume suitable data wherever necessary.
- 3) Draw neat sketches wherever necessary.

1. Explain the following terms : (20)
    - a) Specific yield and storage coefficient
    - b) Water table aquifers and artesian aquifers
    - c) Infiltration galleries
    - d) Flow nets
  2.
    - a) Derive an expression for the yield of a well penetrating a confined aquifer. (10)
    - b) A tube well having diameter of 15cm. fully penetrates confined aquifer of thickness 10m. The discharge from the well at a drawdown of 8m is 80 lps. Determine the coefficient of permeability and the transmissibility of the aquifer. Take the radius of influence as 300m. (10)
  3.
    - a) Write detailed note with sketch on movement of ground water. (10)
    - b) How sea water intrusion is controlled? Explain briefly. (10)
  4.
    - a) Explain various forms of underground sources of water. (10)
    - b) Write on ground water replenishment. Discuss methods of ground water replenishment with neat sketches. (10)
  5.
    - a) Explain different methods of determining yield of dug well. Explain any one method. (10)
    - b) During a recuperation test the water in an open well was depressed by pumping by 2.6m and it recuperated 1.8m in 80 minutes. Estimate the yield from a well of 2.2m diameter under a depression head of 2m situated in the same area. (10)
  6. Write short notes on: (20)
    - i) Interference among the wells
    - ii) Numerical models of Ground water flow
    - iii) Types of well screens
    - iv) Dupit's theory and its limitations
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