

Code No: 157BW**JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD****B. Tech IV Year I Semester Examinations, February/March - 2022****GROUND WATER HYDROLOGY****(Civil Engineering)****Time: 3 Hours****Max. Marks: 75****Answer any five questions
All questions carry equal marks**

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- 1.a) Write a detailed note on ground water potential and development in India.
b) Explain the origin of ground water. [8+7]
- 2.a) Discuss the Ground water hydrologic cycle along with neat sketch.
b) Discuss the types of ground waters aquifers. [8+7]
- 3.a) Write a short notes on tests to be conducted on open wells.
b) Define the terms critical depression head, working head, and specific capacity in the case of an open well. [7+8]
- 4.a) The water level in a well was depressed by pumping upto 4 m and level was raised by 1.5 m in 50 minutes after pumping. Determine the yield from the well if diameter is 2.5m and depression head is 2.5 m. Also find diameter of the well to yield 15 litres/sec under depression head of 3 m.
b) Explain in detail the well interference assessment. [8+7]
- 5.a) Explain Jacob's method in calculating the aquifer parameters.
b) Discuss the unsteady flow towards wells with neat sketch. [7+8]
- 6.a) Describe the leaky artesian aquifer and give the expressions for steady and unsteady flow.
b) Explain the well non-equilibrium equation of Theism solution. [8+7]
- 7.a) Write in detail of sub surface method of exploration.
b) Explain the aerial photogrammetry applications and uses. [7+8]
- 8.a) What are the methods to control saline water intrusion? Explain them briefly.
b) Write short notes on basin management by conjunctive use. [8+7]

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