

**B.TECH. SEM -VII (CIVIL ) 2014 COURSE (CBCS) : SUMMER -  
2018**

**SUBJECT: ELECTIVE-II-GROUND WATER HYDROLOGY**

Day : **Friday**  
Date : **25/05/2018**

**S-2018-2478**

Time: **02.30 PM TO 05.30 PM**  
Max. Marks: 60.

---

**N.B.:**

- 1) All questions are **COMPULSORY**.
  - 2) Figures to the **RIGHT** indicate full marks.
  - 3) Draw neat labeled diagrams **WHEREVER** necessary.
  - 4) Use of non-programmable pocket calculator is **ALLOWED**.
- 

**Q.1** Define the terms: Aquiclude, Aquitard, Aquifuge, and Aquifer with neat sketch (10)  
Leak Aquifer.

**OR**

Discuss global distribution of groundwater availability in world and in India. (10)

**Q.2** What is a flow net? What are its properties and applications of flow net in ground water? (10)

**OR**

Derive the equation for ground water flow potential for isotropic and anisotropic soil. (10)

**Q.3 a)** State the Dupit's theory and assumptions of it. (05)

**b)** A 40 cm well penetrates 100 m below the static water table. After a period of pumping at a rate of 2000 lpm, the drawdowns in the wells at 18 m and 50 m from the pumped well were. 1.9 m and 1.0 m respectively. Determine the transmissibility of the aquifer. What is the drawdown in the pumped well? (05)

**OR**

Comment on Theis Method, Jacob's method and Chow's method for unsteady flow towards wells. (10)

**Q.4** Discuss advantages and disadvantages of open well. (10)

**OR**

Explain the well structure, components of well with a neat sketch. (10)

**Q.5** Explain any two methods of artificial recharge. (10)

**OR**

Describe a recharge well with neat sketch. (10)

**Q.6 a)** Discuss ground water sampling. (06)

**b)** Write drinking water standards according to WHO. (04)

**OR**

Describe any two methods to control sea water intrusion. (10)

\* \* \*