

CIVIL ENGINEERING

QUESTION BANK

Course Title : GROUND WATER HYDROLOGY

Course Code : 23CE711

Regulation : NR23

UNIT-III

Analysis of Pumping Test Data – II

S.No	Questions	BT	CO	PO
Part – A (Short Answer Questions)				
1	What is unsteady groundwater flow?	L5	CO3	6
2	Define non-equilibrium flow in aquifers.	L2	CO3	2
3	State Theis non-equilibrium equation.	L4	CO3	6
4	What is transmissivity in pumping test analysis?	L5	CO3	2
5	Define storativity (storage coefficient).	L2	CO3	2
6	Explain the principle of the Theis solution.	L5	CO3	2
7	What is Jacob's straight-line method?	L5	CO3	5
8	State the advantages of Jacob's simplification.	L5	CO3	2
9	What is Chow's method in pumping test analysis?	L4	CO3	4
10	Define a leaky aquifer and give its significance.	L5	CO3	2
Part – B (Long Answer Questions)				
11	a) Explain unsteady groundwater flow and its importance in aquifer analysis.	L5	CO3	2

	b)	Derive the non-equilibrium groundwater flow equation for pumping wells.	L4	CO3	2
12	a)	Explain Theis non-equilibrium theory and its assumptions.	L5	CO3	2
	b)	Derive the Theis equation for transient flow toward a well.	L5	CO3	2
13	a)	Discuss the graphical solution of the Theis equation.	L5	CO3	2
	b)	Explain Jacob's straight-line method for analyzing pumping test data.	L1	CO3	2
14	a)	Discuss the assumptions, advantages, and limitations of Jacob's method.	L5	CO3	6
	b)	Explain Chow's method for pumping test interpretation.	L1	CO3	2
15	a)	Compare Theis, Jacob, and Chow methods used in pumping test analysis.	L2	CO3	5
	b)	Define transmissivity and storage coefficient. Explain their determination from pumping tests.	L4	CO3	4
16	a)	Discuss the concept of leaky aquifers and their hydraulic behavior.	L5	CO3	6
	b)	Explain groundwater flow toward wells in leaky aquifers with suitable equations.	L1	CO3	2

* **Blooms Taxonomy Level (BT)** (L1 – Remembering; L2 – Understanding; L3 – Applying; Analyzing; L5 – Evaluating; L6 – Creating)

L4 –

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