

CIVIL ENGINEERING

QUESTION BANK

Course Title : GROUND WATER HYDROLOGY

Course Code : 23CE711

Regulation : NR23

UNIT-II

Analysis of Pumping Test Data – I

S.No	Questions	BT	CO	PO
Part – A (Short Answer Questions)				
1	What is a pumping test?	L2	CO2	2
2	Define confined aquifer and unconfined aquifer.	L6	CO2	4
3	What is steady groundwater flow?	L1	CO2	4
4	State the assumptions of Dupuit's theory.	L5	CO2	2
5	Write the Dupuit equation for flow in an unconfined aquifer.	L2	CO2	4
6	What is Thiem's equation?	L5	CO2	1
7	State the assumptions of Thiem's equation.	L2	CO2	6
8	Define drawdown in a pumping well.	L5	CO2	5
9	What are formation constants?	L6	CO2	6
10	Explain the yield of an open well.	L1	CO2	1
Part – B (Long Answer Questions)				
11	a) Explain the principles and objectives of pumping tests in groundwater investigations.	L5	CO2	2

	b)	Discuss steady groundwater flow toward a well in confined aquifers.	L5	CO2	1
12	a)	Derive Dupuit's equation for steady radial flow in an unconfined aquifer.	L2	CO2	2
	b)	State and explain the assumptions of Dupuit's theory.	L2	CO2	4
13	a)	Derive the expression for discharge through an unconfined aquifer using Dupuit's assumptions.	L5	CO2	6
	b)	Explain steady-state flow in confined aquifers and derive the governing equations.	L2	CO2	2
14	a)	Derive Thiem's equation for flow toward a well in a confined aquifer.	L4	CO2	2
	b)	Explain the assumptions and limitations of Thiem's equation.	L6	CO2	2
15	a)	Discuss the determination of aquifer constants from pumping test data.	L2	CO2	1
	b)	Explain the concept of drawdown and recovery in pumping wells.	L2	CO2	2
16	a)	Discuss the yield of an open well and factors affecting it.	L6	CO2	1
	b)	Explain well tests and their significance in groundwater resource evaluation.	L5	CO2	2

* **Blooms Taxonomy Level (BT)** (L1 – Remembering; L2 – Understanding; L3 – Applying; L4 – Analyzing; L5 – Evaluating; L6 – Creating)

L4 –

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