

CIVIL ENGINEERING

QUESTION BANK

Course Title : GROUND WATER HYDROLOGY

Course Code : 23CE711

Regulation : NR23

UNIT-I

Ground Water Occurrence

S.No	Questions	BT	CO	PO
Part – A (Short Answer Questions)				
1	Define groundwater and explain its importance.	L1	CO1	2
2	What is the groundwater hydrologic cycle?	L4	CO1	4
3	Explain the origin of groundwater..	L1	CO1	6
4	What are the major rock properties affecting groundwater occurrence?	L1	CO1	2
5	Differentiate between the zone of aeration and the zone of saturation.	L6	CO1	1
6	Define an aquifer and list its types.	L2	CO1	2
7	What is porosity? State its significance.	L6	CO1	2
8	Define specific yield and specific retention.	L2	CO1	2
9	State Darcy's Law and mention its assumptions.	L1	CO1	2
10	Define permeability, transmissivity, and storage coefficient.	L5	CO1	2
Part – B (Long Answer Questions)				
11	a) Explain the groundwater hydrologic cycle with a neat sketch. Discuss the origin and occurrence of groundwater.	L4	CO1	2

	b)	Describe the vertical distribution of groundwater. Explain the zones of aeration and saturation.	L2	CO1	4
12	a)	Discuss the geological formations that act as aquifers. Explain their characteristics and significance.	L5	CO1	6
	b)	Define aquifers and explain the different types of aquifers with neat diagrams.	L2	CO1	5
13	a)	Explain porosity and discuss the factors affecting porosity of rocks and soils.	L5	CO1	6
	b)	Define specific yield and specific retention. Discuss their engineering significance.	L5	CO1	4
14	a)	State Darcy's Law and explain its applications in groundwater flow analysis.	L6	CO1	1
	b)	Explain permeability and discuss the factors affecting permeability of aquifer materials.	L5	CO1	2
15	a)	Define transmissivity and storage coefficient. Explain their importance in groundwater studies.	L1	CO1	2
	b)	Derive the three-dimensional groundwater flow equation.	L6	CO1	2
16	a)	Derive the groundwater flow equation in polar coordinates and explain its applications.	L5	CO1	2
	b)	Explain groundwater flow nets, contour maps, and their practical applications.	L1	CO1	4

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

L4 –

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