

23CE711 : Ground Water Hydrology (PE-IV)

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UNIT – I

Ground Water Occurrence

- **1. Introduction to Groundwater**
- Groundwater is the water present beneath the earth's surface in the pores and fractures of soil and rocks. It is one of the most important natural resources and is widely used for drinking, irrigation, and industrial purposes.

Introduction to Groundwater Hydrology

- Definition and concept of Introduction to Groundwater Hydrology
- Important principles related to Introduction to Groundwater Hydrology
- Engineering significance and applications
- Examples, diagrams, and calculations where applicable

Groundwater Hydrologic Cycle

- Definition and concept of Groundwater Hydrologic Cycle
- Important principles related to Groundwater Hydrologic Cycle
- Engineering significance and applications
- Examples, diagrams, and calculations where applicable

Origin of Groundwater

- Definition and concept of Origin of Groundwater
- Important principles related to Origin of Groundwater
- Engineering significance and applications
- Examples, diagrams, and calculations where applicable

Rock Properties Affecting Groundwater

- Definition and concept of Rock Properties Affecting Groundwater
- Important principles related to Rock Properties Affecting Groundwater
- Engineering significance and applications
- Examples, diagrams, and calculations where applicable

Porosity

- Definition and concept of Porosity
- Important principles related to Porosity
- Engineering significance and applications
- Examples, diagrams, and calculations where applicable

Specific Yield

- Definition and concept of Specific Yield
- Important principles related to Specific Yield
- Engineering significance and applications
- Examples, diagrams, and calculations where applicable

Specific Retention

- Definition and concept of Specific Retention
- Important principles related to Specific Retention
- Engineering significance and applications
- Examples, diagrams, and calculations where applicable

Vertical Distribution of Groundwater

- Definition and concept of Vertical Distribution of Groundwater
- Important principles related to Vertical Distribution of Groundwater
- Engineering significance and applications
- Examples, diagrams, and calculations where applicable

Zone of Aeration

- Definition and concept of Zone of Aeration
- Important principles related to Zone of Aeration
- Engineering significance and applications
- Examples, diagrams, and calculations where applicable

Zone of Saturation

- Definition and concept of Zone of Saturation
- Important principles related to Zone of Saturation
- Engineering significance and applications
- Examples, diagrams, and calculations where applicable

Aquifers and Geologic Formations

- Definition and concept of Aquifers and Geologic Formations
- Important principles related to Aquifers and Geologic Formations
- Engineering significance and applications
- Examples, diagrams, and calculations where applicable

Types of Aquifers

- Definition and concept of Types of Aquifers
- Important principles related to Types of Aquifers
- Engineering significance and applications
- Examples, diagrams, and calculations where applicable

Permeability

- Definition and concept of Permeability
- Important principles related to Permeability
- Engineering significance and applications
- Examples, diagrams, and calculations where applicable

Darcy's Law

- Definition and concept of Darcy's Law
- Important principles related to Darcy's Law
- Engineering significance and applications
- Examples, diagrams, and calculations where applicable

Storage Coefficient

- Definition and concept of Storage Coefficient
- Important principles related to Storage Coefficient
- Engineering significance and applications
- Examples, diagrams, and calculations where applicable

Transmissivity

- Definition and concept of Transmissivity
- Important principles related to Transmissivity
- Engineering significance and applications
- Examples, diagrams, and calculations where applicable

3D Groundwater Flow Equation

- Definition and concept of 3D Groundwater Flow Equation
- Important principles related to 3D Groundwater Flow Equation
- Engineering significance and applications
- Examples, diagrams, and calculations where applicable

Polar Coordinate Flow Equation

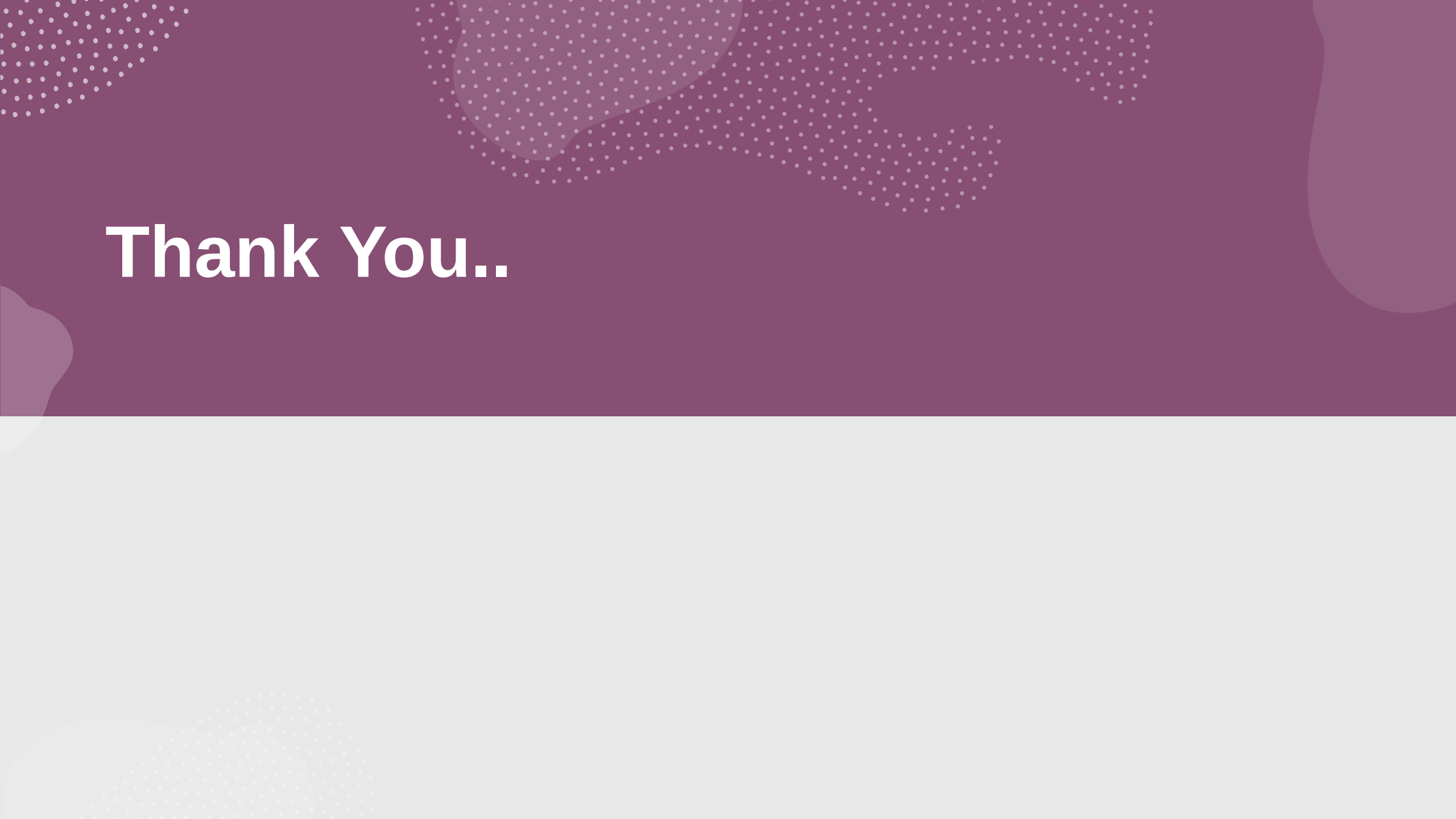
- Definition and concept of Polar Coordinate Flow Equation
- Important principles related to Polar Coordinate Flow Equation
- Engineering significance and applications
- Examples, diagrams, and calculations where applicable

Groundwater Flow Contours

- Definition and concept of Groundwater Flow Contours
- Important principles related to Groundwater Flow Contours
- Engineering significance and applications
- Examples, diagrams, and calculations where applicable

Applications of Flow Contours

- Definition and concept of Applications of Flow Contours
- Important principles related to Applications of Flow Contours
- Engineering significance and applications
- Examples, diagrams, and calculations where applicable



Thank You..