

**Chapter 1 : Introduction to Hydrology 1-1 to 1- 40**

Introduction : Hydrological cycle, applications of hydrology, brief introduction of government organizations like IMD, CWPRS, MERI, CDO, Hydrology Project Division, NIH, CWC. Precipitation: Types & forms of precipitation, precipitation measurement, rain gauge network, introduction to real time data transmission weather station and climate change. Consistency test, presentation of rainfall data, mass rainfall curves, hyetograph, point rainfall, mean precipitation over an area, arithmetic mean method, Thiessen’s polygon, isohyetal method, concepts of depth-area-duration analysis, frequency analysis, frequency of point rainfall, intensity-duration curves, maximum intensity-duration. Abstractions of precipitation : interception, depression storage, evaporation- elementary concepts, factors affecting, measurement of evaporation, transpiration, evapotranspiration, modified Penman method,- process and measurement, infiltration: introduction, infiltration capacity, infiltrometer, Horton’s method and infiltration indices.

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Introduction, term related to reservoir planning (yield, reservoir planning and operation curves, reservoir storage, reservoir clearance), investigation for reservoir planning, significance of mass curve and demand curves, applications of mass curve and demand curves, fixation of reservoir capacity from annual inflow and outflow, fixation of reservoir capacity using elevation capacity curve and dependable yield, reservoir losses, reservoir sedimentation-Phenomenon, measures to control reservoir sedimentation, density currents Significance of trap efficiency, useful life of reservoir, costs of reservoir, apportionment of total cost, use of facilities method, equal apportionment method, alternative justifiable expenditure method. (no numerical on cost-economics)

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