٥٠٦٠٤٤٠١ Water Resources Engineering

Introduction, fields of water resourcesEng. hydraulic of open channel flow, type of flow,stste of flow. Uniform flow-chezy eq., manning eq., computation of normal depth. Numerical solution of manning eq. in non uniform sections, specific energy ,computation of critical flow in rectangular & triangular trapezoidal sections, computation of critical in non uniform section, flow in circular pipe,computationl of normal critical depths in circular pipe, maximum discharge and max. velocity in circular pipe,non- uniform flow, type of gradually varied flow, calculation of gradually varied flow-direct step method, specific force hydraulic jump, application of hydraulic jump, measurement of flow in open channels,venturemeters,nozzlesorifices,weirs.Spillway,coefficientof discharge,reservoirs,flow mass curve method arithmetic meth. ,reservoir sedimentation.Dams,classifications of dams, height economic of dam, forces acting on the dams, hydrostatic force,siltsforce,ice force, earthquake force-hydrodynamic force inertia force, wave force, principal stresses, stability analysis, foundation of earth dams,earthdame,seepage or phreatic line with or without filter, flow net through earth dams, slope stability analysis, Swedish circle method, factor of safety, critical factor of safety, introduction to optimization in water resource system graphical method, simplex method.