

POKHARA UNIVERSITY SERVICE COMMISSION
Syllabus for Deputy Administrator (Civil Engineering) Level Examination

Time: 3 hrs

Full Marks: 75

Surveying (8)

Principles of Surveying, Classifications of Surveying, maps and conventional signs, Accuracy in surveying and errors, Linear Measurements, Leveling including precise leveling and errors, Traversing, Tacheometric survey to produce topographical map, Resection – Intersection to establish unknown coordinates (Analytical method), GPS/ Total Station, Road Bridge site survey technique, / H & V Curve layout computation / IP section etc., Area and Volume survey.

Engineering Materials and Building Technology (5)

Cement, Steel, Bricks, Wood, Flooring materials, Paints, Foundations, Roofs, Temporary Constructions, Cladding, Finishing, Water Supply and Drainage Services.

Soil and Foundation Engineering (8)

Solids- Water –Air Relations and Index properties of soils, Soil Identifications and Classification, Soil Compaction, Compressibility of Soil, Shear Strength of Soil, Stability of Slopes, Soil Exploration, Lateral Earth Pressure Theories and Retaining Walls, Bearing Capacity and Settlement of Shallow Foundations, Pile Foundations, Well Foundations, Mat Foundations

Structural Engineering (12)

Deflection of Beams, Influence Lines for Simple Structures, Statically Determinate Arches, Suspension Cable Systems, solution of statically indeterminate systems, Force method and displacement method, Influence line for continuous beams, Steel Structures and their Analysis and Design, Connections in Steel Structures, Design of Roof Trusses, Concrete Structures and Design Methods, Reinforcement detailing: Codal Provisions, Design of slabs and staircase, Design of compression members: Columns, Design of Footings, Mix design of concrete and properties of green concrete, Design of masonry walls for gravity loads

Water Resources Engineering (12)

Simple pipe flow problems and solution, Three reservoirs problem and Pipe networks, Basics of Open channel flow, Computation of GVF in prismatic channels by (graphical integration, direct integration and direct step and standard step methods), Hydraulic jump in a horizontal rectangular channel. Relationship between hydraulic jump variables (conjugate depth, height of the jump, efficiency jump, length of the jump), Hydrograph Analysis, Statistical methods of flood prediction, Irrigation Water Requirements, Design of Canals, Bligh's, Lane's and Khosla's seepage theory, Design of Head works, River Training Works, Regulating Structures, design of Cross-Drainage structures, Surface drainage systems and their design, Subsurface drainage systems and their design, Engineering of Dams, General Arrangement of components in a typical storage and RoR power plant, Spillways and Energy Dissipaters, Sediment Handling measures

Transportation Engineering**(8)**

Highway Alignment and Engineering Survey, Geometric Design of Highway, Highway Drainage, Special Consideration in Hill Road Design, Highway Materials, Traffic Studies, Traffic Control Devices, Road Intersections, Highway Pavement, Road Construction Technology, Highway Maintenance, Repair, and Rehabilitation

Environmental Engineering**(8)**

Quality of Water, Water Treatment, Reservoirs and Distribution System, Quantity of Waste water, Design and Construction of Sewers, Sewer Appurtenances, Characteristics and Examination of Waste water, Waste water Disposal , Waste water Treatment, Disposal of Sewage from Isolated Buildings, Solid Waste Disposal.

Estimating and Costing**(6)**

Various types of estimates, detailed estimate, estimating for Building works and Road works, Analysis of Rates, Valuation.

Construction Management and Engineering Professional Practice**(8)**

Projects, Planning, Bar Chart, CPM, PERT, Construction Equipments, Personnel Management, Different Methods of Economic Evaluation of Projects, Responsibility of Engineer, Types of Contracts, Conditions of Contracts, Specifications, Cost Control, Quality Control, Safety, Maintenance, Ethics and Professionalism, Legal Aspects of Professional Engineering in Nepal.