

Pokhara University Service Commission
Curriculum for Assist Instructor (Civil) Level Examination
Time: 4 hr **Full Marks : 75**

- 1. Workshop Practice:** Brick work; Carpentry and joinery; Plumbing; Safety practice; Workshop tools. 8
- 2. Engineering Drawings:** Plans, elevations and sections of buildings and civil engineering works; Dimensioning; Plumbing drawing; Roads and water supply drawings. 8
- 3. Surveying:** Principles of surveying; Classifications of surveying; Maps and conventional signs; Accuracy in surveying and errors; Linear measurements; Compass surveying including plotting and balancing the traverse; Leveling including precise leveling and errors; Plain table survey; Theodolite traverse survey; Types of theodolites and source of errors in theodolite works. 10
- 4. Engineering Materials:** Stones; Gravel; Sand; Bricks and other clay products; Timber and other forest products; Lime; Cement; Reinforcing steel; Structural steel; Paints and varnishes; Flooring materials; Cladding materials; Roofing materials. 8
- 5. Estimating and Costing:** Analysis of rates; Various types of estimates; Accuracy in estimating; Approvals; Estimating for road works, building works, water supply and sanitary works, and irrigation works. 8
- 6. Soil Science:** Definition of soils; Types of soils; Formation and transportation of soils; Classification of soils; Weight – volume relationship; Index properties and their determination; Soil – water relation; Soil compaction and consolidation; Bearing capacity and effect of water on bearing capacity; Laboratory determination of various parameters. 9
- 7. Water Resource Engineering:** Source of water; Quality of drinking water; Quantity of water; Water treatment for domestic purpose; Water supply distribution system; Water supply pipes, valves and fittings; Rainfall and run off; Crop water requirement; Method of irrigation; Hill irrigation; Water logging and drainage. 8
- 8. Structural Engineering:** Steel trusses, columns and joints; Introduction of steel and timber truss design; Concept of RCC design; RC sections in simple bending, shear and bond; RCC Construction 8
- 9. Transportation Engineering:** Mode of transport; Concept of airport design; Merits and demerits of rail roads and highways; DoR classification of roads; Urban road pattern; Geometric design of highways; Highway drainage; Retaining structures; Highway pavement construction methods – WBM, Otta seal, SBST, DBST, Asphalt concrete; Quality of road aggregate; Quality of bitumen; Importance of compaction of sub grade and pavement layers; Highway maintenance; Special considerations for hill roads; Culverts and short span river crossings. 8