



प्राविधिक शिक्षा तथा व्यावसायिक तालीम परिषद्
पदपूर्ति समिति
सानाठिमी, भक्तपुर ।

प्राविधिक तथा प्रशिक्षण सेवा, इन्जिनियरिङ्ग प्राविधिक प्रशिक्षण समूह आर्किटेक्ट इन्जिनियरिङ्ग उप
शिक्षक -समूह अधिकृतस्तर तृतीय श्रेणी
आर्किटेक्ट प्रशिक्षक पदको
खुला र आन्तरिक प्रतियोगितात्मक लिखित परीक्षाको पाठ्यक्रम

सेवा : प्राविधिक तथा प्रशिक्षण
उपसमूह : आर्किटेक्ट इन्जिनियरिङ्ग
स्तर : अधिकृत स्तर तृतीय
पाठ्यक्रमको रूपरेखा : यस पाठ्यक्रमको आधारमा निम्नानुसार एक चरणमा परीक्षा लिइनेछ ।
प्रथम चरण : लिखित परीक्षा

समूह : इन्जिनियरिङ्ग प्राविधिक प्रशिक्षण
पद : आर्किटेक्ट प्रशिक्षक

पूर्णाङ्क : १००

द्वितीय पत्र : सेवा सम्बन्धी

पूर्णाङ्क : ५०x२ =००

1. Construction Materials (10%)

- 1.1 Properties of Building Materials: Physical, Chemical ,constituents, Thermal etc.
- 1.2 Stones: Characteristics and Requirements of stones as a Building Materials.
- 1.3 Ceramic Materials: Ceramic Tiles, Mosaic tiles, Bricks type and Testing etc.
- 1.4 Cementing Materials: Types and properties of Lime and Cement , Manufacturing Process, Cement Mortar and Different Tests
- 1.5 Metals : Steels, Types and properties , Alloys
- 1.6 Timber and Wood : Timber trees in Nepal, Hard and Soft wood , Characteristics of good Timber, Seasoning, Preservation of timber , Plywood, Batten board etc
- 1.7 Miscellaneous Materials : Asphalt , Bitumen , Paint and Varnishes, Glass, Polymers
- 1.8 Soil Properties and Parameters.

2. Drawing Techniques (5%)

- 2.1 Drawing sheet composition and its essential components
- 2.2 Suitable scales , site plans ,Preliminary Drawings , Working drawings etc
- 2.3 Theory of Projection drawings: Perspective , Orthographic and Axonometric Projection, First and Third angle Projection
- 2.4 Drafting Tools and equipment's
- 2.5 Drafting Symbols
- 2.6 Topographic, Electrical, plumbing and structural drawings
- 2.7 Technique of Free Hand Drawing.

3. Engineering survey (10%)

- 3.1 Introduction and Basic Principles, Linear Measurement, Chain Survey, Compass Survey, Plane table survey, Leveling and Contouring, Abney Level survey, Theodolite Traversing , Tachometry survey, Trigonometrically Leveling , Hydrographic Survey etc.
Use of Total Station and Electronic Distance Measuring Instruments
- 3.2 Hydrographic surveying

4. Concrete Technology (5%)

- 4.1 Constituents and Properties of Concrete, water Cement ratio, Grade and strength of concrete , Concrete Mix Design, Testing of Concrete
- 4.2 Mixing Transportation , Pouring and Curing of concrete

- 4.3 Admixtures,
- 4.4 High strength concrete
- 4.5 Pre stressed concrete Technology

5. Structure Analysis and Design (10%)

- 5.1 Stress and strains, Theory of tension and Flexure, Moment of Inertia, Centre of Gravity
- 5.2 Analysis of Beams and Frames: Bending Moment, Shear force deflection of beams and frames, determinate structure- Energy Methods, Three hinged system. Indeterminate structures - Slope and deflection method and moment distribution method, Use of influence line Diagrams for simple beams, Unit load Method.
- 5.3 RCC structures: Difference between working Stress and limit State Philosophy, Analysis of RC Beams, Slabs in bending, shear, deflection, bond and end anchorage, Design of axially loaded Columns, isolated and combined footings, Pre Stressed Concrete.
- 5.4 Steel and Timber Structures: Standard and Built up Sections , Design of Riveted, Bolted and Welded connections , Design of simple elements(Ties, strut, axially loaded and eccentric Columns, column base), Design principles of on Timber beams and columns

6. Construction Management (5%)

- 6.1 Construction scheduling and Planning: Network techniques,(CPM, PERT) and bar Charts.
- 6.2 Contractual Procedures and Managements: Types of Contract, Tender and Tender notice, Preparation of Tender document, Contractors Pre-Qualification, Evaluation of Tenders and Selection of Contractors, Contract acceptance, Condition of contract, Quotation and direct Order, Dispute Resolution, Muster roll etc.
- 6.3 Material Management: Procurement procedures and materials handling
- 6.4 Cost control and Quality control
- 6.5 Project Maintenance
- 6.6 Occupational health and safety
- 6.7 Project Monitoring and Evaluation
Variation , Alteration and Omissions

7. Estimating costing and valuation (10%)

- 7.1 Types of estimate and their specific uses
- 7.2 Methods of Calculating Quantities
- 7.3 Estimate of: Building Works, Road earthwork, Canal earthwork, Retaining walls, sanitary works, and Water Supply works.
- 7.4 Estimating Norms and Rate analysis
- 7.5 Bill of Quantities, Specifications and its type and purpose
- 7.6 Running bill and Final Bills and its Payment procedures
- 7.7 Valuation : Its Purpose , principles and methods

8. Engineering Economics (5%)

- 8.1 Benefit Cost Analysis, Cost classification, sensitivity analysis, internal rate of return, time value and money, economic equilibrium, demand supply and production, net present value, financial and economic evaluation.

9. Housing and urban planning (20 %)

- 9.1 Hierarchy of urban settlement
- 9.2 Types of urban settlement in Nepal
- 9.3 Base Maps:
- 9.4 Hierarchy of plans
- 9.5 principle of land use planning
- 9.6 Building Byelaws
- 9.7 periodic plans for local authorities
- 9.8 planning legislation of Nepal
- 9.10 environmental involved in urban planning and development in Nepal
- 9.11 Types of urban development programmes in Nepal
- 9.12 Conservation of heritage sites
- 9.13 Settlement planning for disaster mitigation.
- 9.14 Municipalities of Nepal and their role in urban development.
- 9.15 Different types of housing
- 9.16 Principle of housing design
- 9.17 Squatter and slums.
- 9.18 Different models of land development
- 9.19 Private housing development
- 9.20 Rural housing development programmes in Nepal

10. Architecture (10 %)

- 10.1 History of architecture
- 10.2 Contemporary world architecture
- 10.3 Contemporary Nepalese architecture
- 10.4 Traditional architecture of Nepal
- 10.5 Architecture of Kathmandu Valley
- 10.6 Architecture landmark in Nepal
- 10.7 Conservation of historic building
- 10.8 Standard to be followed while designing building in Nepal
- 10.9 Ethics of architects in professional practice.

11. केही ऐन नियमहरू (5%)

१. नेपाल इन्जिनियरिङ ऐन तथा नियमहरू
२. भवन ऐन, २०५५
३. संयुक्त आवास ऐन, २०५५
४. Public Works Directive, 2002

12. Instructional Skills and Classroom Management (5%)

- Learning Domains and learning styles
- Bloom's Taxonomy
- Be a professional Technical and Vocational Education and Training (TVET) Instructor
- Occupational Safety and Health

Program Evaluation

- Conduct a CIPP Evaluation
- Conduct Goal-Free Evaluations
- Kirkpatrick's Levels of Training Evaluation
- Tyler's Goal-Based Evaluation Approach

॥ समाप्त ॥