

मेचम्ची नगरपालिका कार्यालय  
पदपूर्ति समिति

प्राविधिक सेवा, सहायक स्तर चौथो तह, असिष्टेण्ट सब इन्जिनियर सिभिल) पदको खुला प्रतियोगितात्मक  
लिखित परीक्षाको पाठ्यक्रम

पाठ्यक्रमको रूपरेखा

यस पाठ्यक्रमको आधारमा निम्नानुसार दुई चरणमा परीक्षा लिइने छ :

प्रथम चरण :- लिखित परीक्षा पूर्णाङ्क :- १००  
द्वितीय चरण :- अन्तर्वार्ता पूर्णाङ्क :- २०

चरण	परीक्षा	विषय	पूर्णाङ्क	प्रश्न संख्या	समय	परीक्षा प्रणाली	उत्तीर्णाङ्क
१	लिखित	सेवा सम्बन्धी	१००	५०	४५ मिनेट	वस्तुगत बहुउत्तर (Multiple Choice)	४०
२	अन्तर्वार्ता		२०				

१. यथासम्भव पाठ्यक्रमका सबै एकाईवाट प्रश्नहरु सोधिनेछन् ।
२. लिखित परीक्षामा गल्ती गरेको प्रश्नोत्तरका लागि २० प्रतिशत अङ्क कट्टा गरिने छ ।
३. यस पाठ्यक्रममा जेसुकै लेखिएको भएता पनि पाठ्यक्रममा परेका ऐन, नियमहरु परीक्षाको मिति भन्दा ३ महिना अगाडि (संशोधन भएका वा संशोधन भई हटाइएका वा थप गरी संशोधन भई) कायम रहेकालाई यस पाठ्यक्रममा परेको सम्झनु पर्दछ ।
४. यस पाठ्यक्रममा जेसुकै लेखिएको भएता पनि पाठ्यक्रममा परेका विषयवस्तु मध्येबाट ईन्जिनियरिङ सम्बन्धी विषयबाट ८० अंक र स्थानीय निकायको प्रशासनबाट २० अंक अंकभार कायम गरीनेछ ।

प्रथमपत्रका एकाई	1	2	3	4	5	6	7	8	9	10
प्रश्न संख्या	7	2	6	2	5	6	6	5	5	6

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Syllabus for Assistant Sub-Engineer (NG-II), Civil Group, General Sub-group

**PART-I: WRITTEN EXAMINATION**

**1. SURVEYING (7)**

**1.1 General:**

Classification and types; Principles of surveying; Scales, plans and maps; Entry into survey field books and level books

**1.2 Chain/Tape survey:**

Definition; Principle; Baseline, offset and offset taking procedure; Field book

**1.3 Plane Tabling:**

Terminologies; Accessories; Method of Plain Table surveying

**1.4 Leveling:**

Leveling instrument and accessories; Principles of leveling

**1.5 Compass Surveying:**

Equipment required; Terminologies; Function and handling of compass; Different types of bearing and its calculations; Angle of dip and declination; Local attractions

**1.6 Theodolite and traverse surveying:**

Basic knowledge of theodolite; Importance of Theodolite; Temporary adjustment of theodolite; Tachometry (Stadia method)

**1.7 Contouring:**

Characteristics of contour lines; Methods of locating contours; Contour plotting

**1.8 Setting out:**

Small building, simple curves & Offsets

**2 DRAWING AND MAP READING (2)**

Drawing sheets, Types of Drawings; Drawing equipment; Scales of map and drawing; Different drawing views (Plan, Front, Elevation, Section, Orthographic, Isometric etc.); L-section & X-section drawings

**3 CONSTRUCTION MATERIALS (6)**

**3.1 Stone:**

Formation and types of stones; Dressing, seasoning and stacking; Selection of stones for

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various construction; Dry wall; Gabion box filing; Stone masonry wall

**3.2 Cement:**

Composition and manufacturing process; Storage and transport;

**3.3 Brick:**

Types; Manufacturing Process; Laying Method

**3.4 Paints and Varnishes:**

Definition; Classification; Composition; Selection for Use

**3.5 Bitumen:** General idea only)

**3.6 Wood Work:** Type and Use

**4 HYDRAULICS (2)**

**4.1 General:**

Properties of fluid mass; Weight, specific weight, density, specific volume, gravity, viscosity and pressure

**4.2 Measurement of discharge:**

Weirs and notches; Discharge formulas

**5 ESTIMATION AND COSTING, VALUATION AND SPECIFICATIONS (5)**

**5.1 General:**

Types of estimate; Units of measurement and payment of various items of works/materials; Calculation of area/volume of regular/irregular shapes

**5.2 Rate Analysis and Cost Estimation Norms and Formats:**

Estimations of different items of construction works; Standard rate analysis and cost estimation norms and formats of the Government of Nepal (especially for DOLIDAR/MOFALD/DTO)

**5.3 Specifications:**

Importance and interpretation of specifications of different works

**5.4 Valuation:**

Basic knowledge about valuation and depreciation; Methods of valuation

**6 CONSTRUCTION MANAGEMENT (6)**

**6.1 Organization:**

Need for organization; Basic knowledge of institution for local level development works; Roles and responsibilities of Assistant sub-Engineer and Users committee

**6.2 Site Management:**

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Preparation of site plan; Management and organizing labor, material and equipment for construction Site; general safety measure at site

### **6.3 Contract Management**

Method of procurement of works and goods; Basic tender processes; Earnest money and security deposit; Component of Agreement documents including conditions of contract; Construction supervision; Construction schedule, Bar-chart, Quality control at site; Billing of work completed; Work completion Report

## **7 BUILDING CONSTRUCTION TECHNOLOGY (6)**

### **7.1 Foundation:**

Definition and function of foundation; Types of foundation; General idea on shallow foundation; Shoring and dewatering

### **7.2 Walls & Damp Proofing:**

Types of walls; Wall thickness; Types of bonds; Scaffolding; Source and Remedy of Dampness

### **7.3 Concrete Technology:**

Constituents of cement concrete; Concrete mixes; Water cement ratio and strength; Formworks; Curing; Maximum and minimum steel in beam, Column and slab; Definition of pre-cast structures

### **7.4 Wood Work:**

Characteristics of different types of Timber; Suitability of Timber wood for different work; Frame and shutters of door and windows

### **7.5 Flooring and Finishing:**

Floor finishes (brick, concrete, etc.);

### **7.6 Plastering & Punning**

## **8 WATER SUPPLY AND SANITATION ENGINEERING (5)**

### **8.1 General:**

Source of water and selection; surface water and ground water (surface spring, gravity spring, artesian spring, shallow and deep wells); Public participation

### **8.2 Water Supply System:**

General idea of water demand, selection of pipelines, sedimentation tank ,BPT, Reservoir tank, pipe laying and installation of hand pumps

### **8.3 Water pollution and Treatment units**

### **8.4 Maintenance of Pipelines and Reservoir tanks**

### **8.5 Excreta disposal:**

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Pit latrine; Septic tank

## 9 IRRIGATION ENGINEERING (5)

### 9.1 General:

Types of Irrigation; Methods of Irrigation; Irrigation development in Nepal (general idea only); Irrigation terminology & definitions (GCA, CCA, NCA, Duty, Delta)

### 9.2 Flow Irrigation canal:

Canal losses and control; Maximum and minimum velocities in the canal; Typical Canal section; Safe gradient and slope; Discharge calculation of Irrigation channel

### 9.3 General Maintenance of Canals

## 10 HIGHWAY ENGINEERING (6)

### 10.1 General:

Types of transport system in Nepal; Basic knowledge of Roadway classification, alignment and networks in Nepal

### 10.2 Highway Geometry:

Road-cross-section elements; Road profile L-section; Roads in filling and cutting; Camber; Super elevation; Sight distances; Gradient

### 10.3 Drainage system:

Need of surface and underground water management in road system; longitudinal drainage (side drain); cross drainage (culverts)

### 10.4 Road Pavement:

Pavement structures and its component; Sub grade, Sub base, Base & surface courses

### 10.5 Road Construction and Maintenance

Earth moving and compaction machines; Road Construction Technology; Road Maintenance

### 10.6 Bridge (General idea only)

Types of Bridges; Culverts; Trusses and Truss Bridges