



☎ : ०६६-४२००५५

पुनर्वास नगरपालिका नगर कार्यपालिकाको कार्यालय

प. सं. ०८१/०८२
च.नं.

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२०७३

मेकानिकल सब-इन्जिनियर (सहायक पाँचौं) पदको लिखित परीक्षाको पाठ्यक्रम

यस पाठ्यक्रम योजनालाई दुई चरणमा विभाजन गरिएको छ :

प्रथम चरण : लिखित परीक्षा (Written Examination)

पूर्णाङ्क : १००

उत्तीर्णाङ्क : ४०

द्वितीय चरण : अन्तर्वार्ता (Interview)

पूर्णाङ्क : ३०

परीक्षा योजना (Examination scheme_

प्रथम चरण : लिखित परीक्षा (Written Examination)

पत्र	विषय	प्रश्नको प्रकृति	प्रश्न संख्या * अंक	समय
प्रथम	सेवा सम्बन्धीत कार्य-ज्ञान	वस्तुगत बहुवैकल्पिक (Multiple Choice)	५० प्रश्न * २	४५ मिनेट
द्वितीय	अन्तर्वार्ता	मौखिक	-	-

द्रष्टव्य :

- लिखित परीक्षाको माध्यम भाषा नेपाली वा अंग्रेजी अथावा नेपाली र अंग्रेजी दुवै हुनेछ ।
- वस्तुगत बहुवैकल्पिक (Multiple Choice) प्रश्नहरूको गलत उत्तर दिएमा प्रत्येक गलत उत्तर वापत २० प्रतिशत अङ्क कट्टा गरिनेछ । तर उत्तर नदिएमा त्यस वापत अङ्क दिइने छैन र अङ्क पनि गरिने छैन ।
- बहुवैकल्पिक प्रश्नहरू हुने परीक्षामा कुनै प्रकारको क्याल्कुलेटर प्रयोग गर्न पाइने छैन ।
- यस पाठ्यक्रम योजना अन्तर्गतका पत्र/विषयका विषयवस्तुमा जेसुकै लेखिएको भए तापनि पाठ्यक्रममा परेका कानून, ऐन, नियम तथा नीतिहरू परीक्षाको मिति भन्दा ३ महिना अगाडि (संशोधन भउका वा संशोधन भई हटाईका वा थप गरी संशोधन भई) कायम रहेकालाई यस पाठ्यक्रममा परेको सम्झनु पर्दछ ।
- प्रथम चरणको परीक्षाबाट छनौट भएका उम्मेदवारहरूलाई मात्र द्वितीय चरणको परीक्षामा सम्मिलित गराइनेछ ।
- यस भन्दा अगाडि लागु भएका माथि उल्लेखित सेवा, समूहको पाठ्यक्रम खारेज गरिएको छ ।

पुनर्वास नगरपालिकाद्वारा मेकानिकल सब-इन्जिनियरका लागि लिईले बस्तुगत बहु-वैकल्पिक परिक्षाका लागि सेवा सम्बन्धित कार्य-ज्ञानको पाठ्यक्रम

Machine Drawing

- 1.1 Finding out the missing views from two given projection and dimensioning
 - 1.1.1 Missing views of prismatic work pieces
 - 1.1.2 Missing views of cylindrical work pieces
 - 1.1.3 Missing views of pyramidal, conical, cylindrical cut work pieces
- 1.2 Isometry drawing of machine parts including sections
- 1.3 Drawing of joints
 - 1.3.1 Permanent joints
 - 1.3.2 Temporary joints
 - 1.3.3 Drawing Exercises
 - 1.3.3.1 Nut bolt and threaded joints
 - 1.3.3.2 Riveted joints
 - 1.3.3.3 Welded joints and symbols
 - 1.3.3.4 Gears, Keys and Spline joints
 - 1.3.4 Orthographic projection

2. Heat Engines

- 2.1 Different types of heat engines
- 2.2 Different cycles involved in heat engines
- 2.3 Basic difference in Steam Engine and Automotive engines
- 2.4 Different types of power plants (engine) used in civil Aircraft

3. Thermodynamics

- 3.1 General
 - 3.1.1 Boyle's law, Charles' law and combined gas law
 - 3.1.2 Characteristics of gas constant
 - 3.1.3 Terms used in thermodynamics
- 3.2 First law of thermodynamics
 - 3.2.1 Definition of the first law
 - 3.2.2 Total internal energy
 - 3.2.3 Mechanical equivalent of heat engine
- 3.3 Second law of thermodynamics
 - 3.3.1 Definition of the second law
 - 3.3.2 Thermal efficiency of heat engine
- 3.4 Thermodynamics Properties of Fluid (Definitions only)
 - 3.4.1 Internal energy
 - 3.4.2 Enthalpy
 - 3.4.3 Entropy
 - 3.4.4 Specific heat at constant volume
 - 3.4.5 Specific heat at constant pressure

- 3.5 Basic thermodynamics process
 - 3.5.1 Constant volume process
 - 3.5.2 Constant pressure process
 - 3.5.3 Constant temperature process
 - 3.5.4 Adiabatic process
 - 3.5.5 Polytropic process
- 3.6 Petrol and Diesel Engine Cycles
 - 3.6.1 Constant volume cycle
 - 3.6.2 Constant pressure cycle
 - 3.6.3 Mixed cycle

- 4. **Basic Industrial Management**
 - 4.1 Labour law
 - 4.2 Rights of Unions
 - 4.3 Wages and compensation
 - 4.4 Labour and Management relations
 - 4.5 Basic functions of ILO
 - 4.6 Industrial Hygiene and safety
 - 4.7 Basic functions of ICAO

- 5. **Basic Knowledge of Electro- Mechanical Principle**
 - 5.1 Basic Knowledge of AC and DC Motors
 - 5.2 Basic Knowledge of Generator

- 6. **Industrial Boiler**
 - 6.1 Basic working principle
 - 6.2 Common types of Boilers
 - 6.3 Boilers Fules
 - 6.4 Boilers Efficiency

- 7. **Estimating and costing**
 - 7.1 General
 - 7.1.1 Concept of profitability, break-even point, return on investment, liability, assets, fixed cost, variable cost, fixed capital, working capital equity, depreciation and amortization
 - 7.1.2 Elements of cost and classification

- 8. **Applied Mechanics**
 - 8.1 Statics
 - 8.1.1 Coplanner system of intersecting forces
 - 8.1.2 Coplanner parallel forces, the moment of a force
 - 8.1.3 Centre of Gravity
 - 8.1.4 Friction

- 8.2 Kinematics
 - 8.2.1 Definition of technical terms: speed, velocity, acceleration, distance traversed and their units
 - 8.2.2 The trajectory of particles, distance and time
 - 8.2.3 Rectilinear motion of a particle
- 8.3 Composition of a simple motion of a particle
 - 8.3.1 Curvilinear motion of a particle
 - 8.3.2 Simple motion of a solid body
- 8.4 Dynamics
 - 8.4.1 Fundamental laws of dynamics: Newton's law of motion
 - 8.4.2 Work, Energy and Power
 - 8.4.3 Mechanical Energy
 - 8.4.4 Relation between RPM, Torque and Power
 - 8.4.5 Law of conservation of energy