

नेपाल आयल निगम लिमिटेड

तह ५ प्राविधिक, बरिष्ठ सहायक, ओभरसियर (मेकानिकल, सिभिल, इलोकट्रिकल) पदको
खुल्ला प्रतियोगितात्मक लिखित परीक्षाको पाठ्यक्रम

१. शैक्षिक योग्यता: मान्यता प्राप्त शिक्षण संस्थाबाट मेकानिकल ईन्जिनियरिङ्ग विषयमा डिप्लोमा (त्रिभुवन विश्वविद्यालय द्वारा मान्यता प्राप्त) वा सो सरह उत्तीर्ण ।

२. लिखित परीक्षाको विषय, पूर्णाङ्क, परीक्षा प्रणाली, प्रश्न संख्या, अंकभार समय र उत्तीर्णाङ्क निम्नानुसार हुनेछ ।

परीक्षा	विषय	पूर्णाङ्क	परीक्षा प्रणाली	प्रश्न संख्या	प्रति प्रश्न अंकभार	समय	उत्तीर्णाङ्क
लिखित	सेवा सम्बन्धी	१५०	वस्तुगत बहुउत्तर	५०	१	३ घण्टा	५३
			छोटो उत्तर	८	१०		
			लामो उत्तर	२	१०		

३. वस्तुगत बहुउत्तर परीक्षा प्रणालीमा प्रत्येक प्रश्नका चारवटा सम्म संभाव्य उत्तर दिइनेछ । जसमध्ये एउटा सही उत्तरमा (✓) चिन्ह लगाउनु पर्ने वा सही उत्तरको वर्णानुक्रम लेख्नु पर्नेछ ।

४. परीक्षाको माध्यम नेपाली वा अंग्रेजी भाषा हुनेछ ।

५. लिखित परीक्षामा उत्तीर्ण भएका उम्मेदवारहरूलाई मात्र अन्तर्वार्तामा सहभागी हुन आमन्त्रित गरिनेछ ।

सेवा सम्बन्धी (मेकानिकल ईन्जिनियरिङ्ग)

1. 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. Industrial Management

4.1 Objectives of business

4.2 Management process and Function

4.3 Marketing (Product promotion)

4.4 Labour and Management relations

4.5 Capital Management

4.6 Industrial Hygiene and safety

4.7 Quality control

4.8 Communication

4.9 Leadership and decision making

4.10 Concept of profitability, break-even point, return on investment, liability, assets, fixed cost, variable cost, fixed capital, working capital equity, depreciation and amortization

4.11 Elements of cost and classification

5. Electro Technology

5.1 Basic Knowledge of AC and DC Motors

5.2 Basic Knowledge of Generator and transformer

5.3 Electrical supply and distribution and control

6. Industrial Boiler

6.1 Basic working principle

6.2 Common types of Boilers

6.3 Boilers Fules

6.4 Boilers Efficiency

7. Applied Mechanics

7.1 Statics

7.1.1 Coplaner system of intersecting forces

7.1.2 Coplaner parallel forces, the moment of a force

7.1.3 Centre of Gravity

7.1.4 Friction

7.2 Kinematics

7.2.1 Definition of technical terms: speed, velocity, acceleration, distance traversed and their units

7.2.2 The trajectory of particles, distance and time

7.2.3 Rectilinear motion of a particle

7.3 Composition of a simple motion of a particle

7.3.1 Curvilinear motion of a particle

7.3.2 Simple motion of a solid body

7.4 Dynamics

7.4.1 Fundamental laws of dynamics: Newton's law of motion 9.4.2 Work, Energy and Power

7.4.3 Mechanical Energy

7.4.4 Relation between RPM, Torque and Power

7.4.5 Law of conservation of energy