

नेपाल आयल निगम लिमिटेड

तह ५ प्राविधिक, बरिष्ठ सहायक (प्रयोगशाला) पदको खुल्ला प्रतियोगितात्मक लिखित परीक्षाको पाठ्यक्रम

- शैक्षिक योग्यता: मान्यता प्राप्त शिक्षण संस्थाबाट केमिष्ट्री विषयलिई विज्ञान विषयमा स्नातक तह वा सो सरहको परीक्षा उत्तीर्ण गरेको ।
- 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	१००	वस्तुगत बहुउत्तर	४०	१	२ घण्टा	३५
			छोटो उत्तर	५	१०		
			लामो उत्तर	१	१०		
प्रयोगात्मक		५०				१ घण्टा	१८

- प्रथम चरणको विषयगत (लिखित) र प्रयोगात्मक परीक्षा अलग अलग हुनेछ ।
- प्रयोगात्मक परीक्षाका लागि लिखित परीक्षामा सामेल भएका परीक्षार्थीहरु मध्येबाट लिखित परीक्षामा प्राप्त Merit को आधारमा १ देखि ५ पद सम्मको लागि थप ५ जना र ६ भन्दा बढी पदका लागि दोव्वर संख्या निर्धारण गरिनेछ ।
- वस्तुगत बहुउत्तर परीक्षा प्रणालीमा प्रत्येक प्रश्नका चारवटा सम्म संभाव्य उत्तर दिइनेछ । जसमध्ये एउटा सही उत्तरमा (✓) चिन्ह लगाउनु पर्ने वा सही उत्तरको वर्णानुक्रम लेख्नु पर्नेछ ।
- परीक्षाको माध्यम नेपाली वा अंग्रेजी भाषा हुनेछ ।
- लिखित तथा प्रयोगात्मक परीक्षामा उत्तीर्ण भएका उम्मेदवारहरुलाई मात्र अन्तर्वार्तामा सहभागी हुन आमन्त्रित गरिनेछ ।

सेवा सम्बन्धी (प्रयोगशाला)

WRITTEN

- Acids and bases: Bronsted and Lewis acid-base concept, hard and soft acids and bases, relative strengths of acids and bases and effect of substituents and solvents on them.
- Refining and purification of metals: Chromatography, ion exchange, solvent extraction, oxidative refining, parting process, zone refining, Mond's process.
- Liquid state: Vapour pressure, vapour pressure and boiling point, surface tension and its determination using Stalagnometer, viscosity and determination by Ostwald viscometer, applications of surface tension and viscosity measurements, flash point.
- Solid state: Crystalline and amorphous solids, classification of solids on the basis of dominant type of bond.
- Chemical Kinetics: Concept of rate of reaction, dependence of reaction rate on concentration, measurement of reaction rate, order and molecularity of a reaction, rate equations for zero, first and second order reactions, the temperature dependence of reaction rates, reaction mechanisms, catalysis

6. Chemical change and chemical equations: Type of chemical change, factors governing chemical change, chemical equations, their significance different ways of balancing them.
7. Hydrogen: Position of hydrogen in the periodic table, technical preparation, Laboratory preparation from acids.
8. Oxygen: Position in the periodic table, laboratory preparation from compound containing high percentage of oxygen, properties, applications, oxides.
9. Water: Hard and soft water, removal of hardness, composition of water, structure solvent property of water.
10. Carbon Mono-oxide and Carbon Dioxide: Preparation, properties and applications
11. Sulphur: Structure of sulphur
12. Hydrogen sulphide and sulphur dioxide: Preparation properties and applications
13. Sulphuric Acid: Properties and applications
14. Phosphorus: Know about red and white phosphorus
15. Isolation and purification of organic compounds: Sources of compound, characteristics of organic compound, Extra action of organic substances form natural sources, purification, crystallization, sublimation, distillation, steam distillation, washing drying, criteria of purify.
16. Aliphatic and aromatic Hydrocarbons and petro chemicals.
17. Antiknocking properties of petro chemicals.

PRACTICAL

The candidates will be asked to perform laboratory works from the following topics.

1. Determination of volume, weight etc using deferent measuring tools
2. Determination of Density of materials
3. Determination of refractive index
4. Determination of specific heat capacity and latent of materials
5. Determination of specific gravity
6. To separate deferent materials from the mixture.
7. Use of distillation to produce distillate
8. To neutralize acid with proper solution.
9. To investigate the composition of water by electrolysis.
10. To determine the pH of different unknown solution & using pH paper and universal indicator.
11. To carry out conductivity experiments on solids & liquids
12. Determine Flash point, Viscosity of Oil