

नेपाल नागरिक उड्डयन प्राधिकरण
प्राविधिक सेवा, मेकानिकल इन्जिनियरिङ्ग समूह, छैठौँ तह, अधिकृत पदको खुला/आन्तरिक प्रतियोगितात्मक परीक्षाको
पाठ्यक्रम

द्वितीय पत्र: सेवा सम्बन्धी

खण्ड (क) - ५० अङ्क

1. **Workshop Practices and Measurement**
 - 1.1 Standard units of measurements and Measuring Instruments
 - 1.2 Error and accuracy
 - 1.3 Hand tools and their application.
 - 1.4 Machine Tools: Lathe, Shaper, Milling, Drilling, Grinding Machines
 - 1.5 Metal Joining: Soldering, Brazing, Electric arc welding, Gas welding and cutting
 - 1.6 Sheet metal and Pipe works
2. **Estimating and Costing**
 - 2.1 Concept of profitability, break-even point, return on investment, liability and assets, fixed cost, variable cost, fixed capital, working capital, equity, depreciation
 - 2.2 Estimation of repair and maintenance works of mechanical equipment and facilities
3. **Maintenance Management and Record Keeping**
 - 3.1 Spare parts management and inventory control
 - 3.2 Preventive maintenance and its necessity
 - 3.3 Break-down maintenance
 - 3.4 Maintenance works of mechanical equipment, system and facilities
 - 3.5 Management of Mechanical Workshop & Warehouse
 - 3.6 Importance of record keeping
 - 3.7 Knowledge of maintenance Job Card
 - 3.8 Basic knowledge of operation log sheet
 - 3.9 Fault Reporting and Clearing System
 - 3.10 Use of Catalogues, Engineering Drawing and Workshop Manual
4. **Electro-mechanical Equipment**
 - 4.1 Working principle of Generator, their components and functions
 - 4.2 Working principle of Motor, their components and functions
 - 4.3 Working principle of Electric Vehicle, their components and functions
 - 4.4 Different Types of Pumps & Compressor and its application.
5. **Airport Terminal Facilities Equipment**
 - 5.1 Elevator: Operation, Maintenance and Troubleshooting
 - 5.2 Escalator: Operation, Maintenance and Troubleshooting
 - 5.3 Baggage Handling System (BHS): Working principle, Types, Layout, Components, VFD system and Troubleshooting
 - 5.4 Basic concept of Aerobridge
 - 5.5 Airport Trolley
6. **Safety Practices and Management**
 - 6.1 Safety: Types and importance
 - 6.2 Safety tools and device
 - 6.3 Safety measures

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7. **Engineering Graphics and Machine Drawing**
 - 7.1 Projection and dimensioning
 - 7.2 Isometric drawing of machine parts including sections
 - 7.3 Drawing of joints, drawing exercises and orthographic projection
8. **Automotive system**
 - 8.1 CI engine, SI engine: Functions and components,
 - 8.2 Braking system, Transmission system, Suspension system, Cooling system, Lubricant system, Steering system, Exhaust system, Troubleshooting of each system
 - 8.3 Electrical system, Fuel injection System, Types and Properties of Batteries and Troubleshooting of each system
 - 8.4 Identification of need of engine overhaul
 - 8.5 Purpose and function of super charger and turbo charger
 - 8.6 Types of wheel, tyres and rating of tyres, Advantages and disadvantages of radial ply and cross ply tyres
 - 8.7 Types of Fuel, Types of Lubricants, application and replacement
 - 8.8 Vehicular Emission Standards
9. **Refrigeration & Air Conditioning**
 - 9.1 Introduction and lay out of different types of Air Conditioning System
 - 9.2 Types function of different components of air conditioning System, Equipment and control components i.e. expansion devices, thermostat, pressure cut out devices
 - 9.3 Types of refrigerant
 - 9.4 Heat Pump
10. **Airport Rescue and Firefighting (ARFF) Vehicles**
 - 10.1 Automatic Transmission System
 - 10.2 Firefighting pump
 - 10.3 Basic concept and application of Pneumatic System
 - 10.4 Basic concept and application of Hydraulic System
 - 10.5 Types of Filters
 - 10.6 Power Take-Off
11. **Miscellaneous**
 - 11.1 Basic knowledge of heavy equipment and their functions: Loader, Dozer, Excavator, Roller, Fork Lift, Crane, Dock leveler, Weighing Scale
 - 11.2 ICAO Annex 14 part I Aerodrome: Chapter - 8 (Related with mechanical equipments, systems and facilities)

द्वितीय पत्रबाट निम्नानुसार प्रश्न सोधिनेछ :

द्वितीय पत्र (विषयगत)				
विषय	खण्ड	अङ्कभार	छोटो उत्तर	लामो उत्तर
सेवा सम्बन्धी	(क)	५०	२ प्रश्न X ५ अङ्क = १०	४ प्रश्न X १० अङ्क = ४०
	(ख)	५०	२ प्रश्न X ५ अङ्क = १०	४ प्रश्न X १० अङ्क = ४०
	जम्मा	१००	४ प्रश्न X ५ अङ्क = २०	८ प्रश्न X १० अङ्क = ८०