

नेपाल नागरिक उड्डयन प्राधिकरण  
प्राविधिक सेवा, इलेक्ट्रिकल इन्जिनियरिङ्ग/मेकानिकल इन्जिनियरिङ्ग समूह, एघारौँ तह, निर्देशक पद (EE,ME)को  
खुला/आन्तरिक प्रतियोगितात्मक लिखित परीक्षाको पाठ्यक्रम  
द्वितीय पत्र : सेवा सम्बन्धी  
खण्ड (क) - ६० अङ्क

**1. General**

- 1.1 Optimization of productivity and efficiency of Organization
- 1.2 Leadership and its elements
- 1.3 Ethics & Professionalism
- 1.4 Power & Decision Making
- 1.5 Authority, Responsibility & Accountability
- 1.6 Resource Planning and Leveling
- 1.7 Budget planning: Long term planning, Short Term Planning and Annual Budgeting
- 1.8 Budgetary Control and Monitoring
- 1.9 Result Base Management (RBM)
- 1.10 External Financing and Donor Funding Policy

**2. Investment and Procurement**

- 2.1 Commercial & Business plan
- 2.2 Investment policy and plan
- 2.3 National Procurement guidelines
- 2.4 Procurement guidelines of Asian Development Bank and World Bank
- 2.5 International Bidding Documents
- 2.6 National Bidding Documents

**3. Power Generation & Supply**

- 3.1 Types of Power Generating Plants: Thermal (Diesel Generator) , Hydro, Solar PV System
- 3.2 Heat Engines: Internal combustion Engines
  - 3.2.1 Spark ignition engine
  - 3.2.2 Compression Ignition engine
- 3.3 Concept & Application of Rankine cycle and Brayton cycle for power generation
- 3.4 Standby Power Supply System
- 3.5 Auto mains failure (AMF) and Automatic Power Transfer System
- 3.6 Uninterruptible Power Supplies (UPS) System and application
- 3.7 Concept and application of No-Break Power Generation

**4. Engineering & Management of Electromechanical system**

- 4.1 Concept of Internal Rate of Return (IRR), Net Present Value (NPV), Payback Period
- 4.2 Depreciation
- 4.3 Concept of Energy audit, TOD Meter, Load management, Rate of Return
- 4.4 Economical Impact analysis
- 4.5 Inventory Management & Control
- 4.6 Quality management
  - 4.6.1 Quality Control
  - 4.6.2 Quality Assurance
- 4.7 ISO 9001: 2008 Quality management system & Certification
- 4.8 Requirement of QMS in Aviation Sector
- 4.9 Maintenance of electrical & mechanical equipments & facilities used in airport

## नेपाल नागरिक उड्डयन प्राधिकरण

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### 5. Environment Pollution & Control

- 5.1 Standards
- 5.2 Preventative measure & Pollution Control
- 5.3 Environmental Impact Assessment (EIA)
- 5.4 Initial Environmental Examination (IEE)

### 6. Equipment Replacement Policy

- 6.1 Life cycle costing
- 6.2 Operation & maintenance (O&M) plan
- 6.3 Standardization of Equipment & facilities
- 6.4 Issues governing of equipments & facilities selection

### 7. Concept, Requirements and Maintenance of Electrical & Mechanical Equipments

- 7.1 Diesel Engine and Generators
- 7.2 Air conditioning System
- 7.3 Rescue and fire Fighting Vehicles
- 7.4 Terminal Equipments: Baggage Conveyor, Elevator, Escalator, CUTE, BRS
- 7.5 Construction Equipments & Heavy equipments
- 7.6 Pavement Evaluation Devices, i.e. Fiction testing Device, PCN Evaluation Device, Rubber Removal Equipments
- 7.7 Hoisting & Lifting Devices
- 7.8 Transport Vehicle (Automobiles)
- 7.9 Transformer & Electrical Devices
- 7.10 Visual Aids

## खण्ड (ख) - ४० अंक

### 8. Aerodrome Certification, Regulatory System (DOC 9774)

- 8.1 Aerodrome Certification: Basic principles for aerodrome certification regulations, Implementation of the regulation, Aerodrome certification model regulations
- 8.2 Aerodrome certification procedures: Certification process, Dealing with the expression of interest, Assessment of a formal application for an aerodrome certificate, The grant or refusal of a certificate, Promulgation in the AIP of the certified status and details of the aerodrome, Transfer of an aerodrome certificate, Surrender of an aerodrome certificate
- 8.3 Regulatory authority: Organization, Functions and responsibilities of the DASS, Technical library and records, Staffing Qualifications, duties and responsibilities of aerodrome inspectors
- 8.4 Certification of aerodromes (DOC 9981): Aerodrome manual (Components and subjects covered in an aerodrome manual), Initial certification Process (Technical inspections and on-site verifications), Continued aerodrome safety oversight
- 8.5 Safety assessments for aerodrome: Safety assessment process, Approval or acceptance of a safety assessment, Promulgation of safety information, Safety assessment flow chart, Safety assessment methodologies for aerodromes
- 8.6 Reporting format using standard runway condition report (RCR): Runway surface condition assessment and reporting, Aerodrome movement area maintenance, Methods of assessing runway surface condition, NOTAM/SNOWTAM, AIP & its revision process.

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**9. Aerodrome Safety Management System (DOC 9859)**

- 9.1 Safety management system, Safety management applicability, Implementing safety management, Integrated risk management, Safety objectives, Safety performance indicators and safety performance targets, Monitoring safety performance
- 9.2 Safety data collection, Safety analysis
- 9.3 Safety data and safety information collection, Safety data processing, Safety data and safety information management, reporting of analysis results, Safety information sharing and exchange, Data-driven decision-making
- 9.4 State safety program (SSP), State safety policy, objectives and resource, State safety risk management, State safety assurance, State safety promotion, SSP implementation
- 9.5 SMS framework: Safety policy and objectives, Safety risk management, Safety assurance, Safety promotion, Implementation planning

**10. Universal Safety Oversight Audit Programme (USOAP) Continuous Monitoring Approach (CMA)**

- 10.1 Critical Elements of a State Safety Oversight System, Primary aviation legislation (CE-1), Specific operating regulations (CE-2), State system and functions (CE-3), Qualified technical personnel (CE-4), Technical guidance, tools and the provision of safety-critical information (CE-5), Licensing, certification, authorization and approval obligations (CE-6), Surveillance obligations (CE-7), Resolution of safety issues (CE-8)

**11. Conventional on International Civil Aviation-Doc (7300), ICAO Annex 14, Volume I, Airport Service Manual (Doc-9137) Part 1- Rescue and firefighting. Aerodrome Design Manual (Doc-9157) Part -4 (Visual Aids), Part-5 (Electrical Systems)**

द्वितीय पत्रबाट निम्नानुसार प्रश्न सोधिनेछ :

द्वितीय पत्र					
विषय	खण्ड	अङ्कभार	परीक्षा प्रणाली		प्रश्न संख्या X अङ्क
सेवा सम्बन्धी	(क)	६०	विषयगत	समस्या समाधानमूलक प्रश्न	३ प्रश्न X २० अङ्क
	(ख)	४०		सैद्धान्तिक-तर्कयुक्त र विश्लेषणात्मक प्रश्न	१ प्रश्न X १५ अङ्क
				व्यावसायिक योजना/मामिला विश्लेषण सम्बन्धी प्रश्न	१ प्रश्न X २५ अङ्क
जम्मा		१००			