

नेपाल नागरिक उड्डयन प्राधिकरण  
प्राविधिक सेवा, एभिएसन फायर सर्भिसेज समूह, दशौं तह, उपनिर्देशक पदको खुला/आन्तरिक प्रतियोगितात्मक  
लिखित परीक्षाको पाठ्यक्रम  
द्वितीय पत्र : सेवा सम्बन्धी  
खण्ड (क) – ६० अङ्क

**1. Chemistry of Fire**

- 1.1 Introduction of fire
- 1.2 Classes of fire
- 1.3 Chemistry of combustion
- 1.4 Methods of extinguishment
- 1.5 Characteristics of solid, liquid and gas fires
- 1.6 Heat and temperature
- 1.7 Fire behavior

**2. Rescue and Fire Fighting Service (RFFS)**

- 2.1 Fire station administration
- 2.2 Fire station activities
- 2.3 Basic elements of fire station
- 2.4 Design and siting of airport fire station
- 2.5 Watch tower operation
- 2.6 RFFS SOP and Manual
- 2.7 Concept of satellite fire station

**3. Aircraft Firefighting and Rescue Procedure**

- 3.1 Fighting aircraft fires
- 3.2 Helicopter Fire Fighting
- 3.3 Rescue tactics and associated equipment requirements
- 3.4 Accidents involving dangerous goods
- 3.5 Response to acts of unlawful interference
- 3.6 Compartment fire & tactical ventilation
- 3.7 Liquefied petroleum gas firefighting tactics & techniques
- 3.8 Post-accident procedures
- 3.9 Post-incident operations

**4. Factors in the specification process for rescue and firefighting vehicles:**

- 4.1 Introduction
- 4.2 Preliminary considerations
- 4.3 Preparation of specification
- 4.4 Additional contractual considerations
- 4.5 Aspects to be considered in preparing a specification for an RFF vehicle

**5. Level of Protection to be Provided**

- 5.1 Airport category
- 5.2 Amounts of extinguishing agents
- 5.3 Critical area for calculating quantities of water
- 5.4 Discharge rates
- 5.5 Response time
- 5.6 Number of vehicles and equipment

**6. RFF Personnel**

- 6.1 General requirements
- 6.2 Selection of personnel for RFF duties

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- 6.3 Management of RFF personnel
- 6.4 Physical and Medical fitness for RFF Services
- 6.5 ARFFS Task Resource Analysis (TRA)

**7. Fire Prevention**

- 7.1 Causes of fire
- 7.2 Fire prevention programme and activities
- 7.3 Public/employee fire awareness planning
- 7.4 Inspection, fire risk and preventive measures
- 7.5 Fire alarm and detection system
- 7.6 Test and inspection of extinguishers
- 7.7 Fire prevention during refueling operations

**8. Training**

- 8.1 General
- 8.2 Fire dynamics, toxicity and first aid
- 8.3 Extinguishing agents and firefighting techniques
- 8.4 Handling of vehicles, equipment
- 8.5 Aircraft layout and aircraft construction
- 8.6 Operational tactics and maneuvers
- 8.7 Emergency management
- 8.8 Physical and mental fitness

**9. Rescue Operation in Difficult Environments**

- 9.1 General
- 9.2 Operational procedures for accident in the difficult terrain
- 9.3 Assessments to approach beyond runway thresholds
- 9.4 Inter-agency exercises

**10. Airport Emergency Planning (AEP)**

- 10.1 Concept
- 10.2 Responsibility and role of each agency for each type of emergency
- 10.3 Emergency operations centre, mobile command post and on-scene commander
- 10.4 Airport emergency exercises
- 10.5 Triage and medical care
- 10.6 Communications
- 10.7 Review and documentation

**11. Aerodrome Safety**

- 11.1 Concept of Universal Safety Oversight Audit Program (USOAP)
- 11.2 Regulatory functions and requirements under Civil Aviation Authority of Nepal
- 11.3 Concept of State Safety Program (SSP)
- 11.4 Safety policy, Safety risk management, Safety assurance & Safety promotion
- 11.5 Hazard identification, Safety Risk Assessment, Risk mitigation, gap-analysis, Acceptable Level of Safety, Runway Safety Program, Runway Safety Team, Safety Action Group, Safety Review Board, Current status of SMS implementation

**12. Wildlife Hazard Management**

- 12.1 Introduction
- 12.2 Aerodrome wildlife safety risk assessment

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- 12.3 Habitat management
- 12.4 Management of hazardous wildlife
- 12.5 Operational notifications
- 12.6 Wildlife hazard management programme

**13. Human Factor in Rescue & Fire Fighting Services**

- 13.1 General
- 13.2 SHELL MODEL
- 13.3 Human Factors issue in RFF services
- 13.4 Operational effectiveness and standards
- 13.5 Safety and Well-being of RFF personnel

**14. Removal of Disabled Aircraft (RODA) Manual**

- 14.1 Introduction of RODA
- 14.2 Preparation
- 14.3 Role and Responsibilities of ARFFS
- 14.4 Site survey
- 14.5 Post-recovery corrective actions

खण्ड (ख) – ४० अङ्क

**15. Preventive maintenance of vehicles and rescue equipment**

- 15.1 General
- 15.2 Preventive maintenance
- 15.3 Personnel
- 15.4 Maintenance procedures
- 15.5 Maintenance work areas / special tools
- 15.6 Performance testing of fire vehicles
- 15.7 Rescue equipment requirements
- 15.8 Maintenance documentation
- 15.9 Maintenance record keeping
- 15.10 Protective clothing

**16. Leadership in the Fire Service**

- 16.1 Introduction
- 16.2 Nature
- 16.3 Leadership style
- 16.4 Qualities of leadership
- 16.5 Principles of leadership

**17. Emergency Management**

- 17.1 Legal aspects of aviation emergency management
- 17.2 Aircraft accident investigation
- 17.3 Psychological impact of major disasters
- 17.4 Airport Emergency Preparedness
- 17.5 Post aviation accident management

**18. Budget for ARFFS**

- 18.1 Introduction
- 18.2 Budget formulation, implementation, monitoring and evaluation

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**19. Planning of Airport Water Supply**

- 19.1 Water supply source and arrangements
- 19.2 Pumping facilities, water distribution and arrangements
- 19.3 Fuel farm and associated facilities
- 19.4 Operation, maintenance and testing of firefighting facilities

**20. Airport Certification Regulation**

- 20.1 Airport Certificate
- 20.2 Aerodrome manual
- 20.3 Obligation of the Airport Operator
- 20.4 Exemptions
- 20.5 ICAO Requirement on Aerodrome Certification
- 20.6 Aerodrome Certification Requirements in Nepal
- 20.7 Surveillance, audit and inspection of aerodromes for the certification

**21. Recent international trends and technologies in aviation firefighting**

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			