

# Nepal Airlines Corporation

## Human Resources Department

### OPEN COMPETITION Syllabus for Sr. Captain, Grade IX

#### A. Stage and Procedures of Examination System

Phase	Subject	Marks	Examination System	No. of Questions X Marks	Time
First 70 %	Written Exam	Full Mark 100 Pass Mark 80	Objective Questions ( 50 x 2 = 100)		1 Hours
Second 10 %	Aptitude Test	Full Mark 20	1. Mental Abilities	2 x 4 = 8	20 Minutes
			2. Situational Judgment	2 x 2 = 4	
			3. Memory	2 x 1 = 2	
			4. Course of Action		
			5. Communication Skill	2 x 2 = 4	
Third 20 %	Interview	20	Oral ( only of medically fit candidates)		

#### B. Content Materials

- 1. Airframe and Systems: 12 Marks (6 Questions)**
  - a) Airfoils
  - b) Flight Controls, Types and uses
  - c) Operational Procedures and limitations of power plants ( Air density)
  - d) Pitch, Yaw, Roll
  
- 2. Aerodynamics ( Theory of flight) 8 Marks (4 Questions)**
  
- 3. Aircraft Performance 8 marks (4 Questions)**
  - a) Factors affecting aircraft performance C.G
  - b) Effect of Temperature
  - c) Effect of Altitude/ Density Altitude
  
- 4. Flight Planning 6 Marks (3 Questions)**
  - a) IFR / VFR Operation
  - b) Limitation of IFR/VFR Operation

- 5. Aircraft Instrument** **6 Marks (3 Questions)**
- a) Basic flight instruments
  - b) Basic navigations instruments
  - c) Basic engine instruments ( Turbo Prop/Turbo Jet)
  - d) RNAV / VNAV / LNAV
- 6. Air navigation** **6 Marks (3 Questions)**
- a) Great circle, small circle, thumb lines
  - b) Latitude, longitudes
  - c) Directions (Compass-true and magnetic, definitions, their interrelationships and use)
  - d) Magnetic Compass
- 7. Charts** **4 Marks (2 Questions)**
- 8. Metrology** **8 Marks (4 Questions)**
- a) Atmosphere and physical process
  - b) Humidity and precipitation
  - c) Monsoonal Weather in Nepal
  - d) Motion of atmosphere (Mountain waves, wind shears, local winds, pressure gradient)
  - e) Surface weather (Fog, mist, haze, snow)
  - f) Air mass (Fronts, turbulence, thunderstorms, squall lines)
  - g) Weather observations
- 9. Human performance and Limitations** **4 Marks (2 Questions)**
- a) Hypoxia, hyperventilation, disorientation
  - b) Visual illusions
  - c) Effect of Fatigue flying and health (alcohol, smoking, drugs and medication)
  - d) CRM
- 10. Operations Procedures and rules of the air** **10 Marks (8 Questions)**
- a) Definitions as per ICAO Annex 6
  - b) Flight operations
  - c) Aerodrome operating minima
  - d) Minimum safe Altitude
  - e) Requirement for alternate aerodrome
  - f) Duties and responsibilities of PIC and Co-pilot
  - g) Fuel requirements / Fuel Calculation
  - h) Safe Carriage of dangerous goods
  - i) Flight safety (use of seat belts and shoulder harness, wake turbulence hazard)

- 11. Rules and regulations for ALTP holders** **4 Marks (2 Questions)**
- a) Necessity, requirements, privileges, responsibility and limitations
  - b) Logging of flight time
  - c) Maintaining and renewal of license
- 12. Basic requirements of flying procedures** **4 Marks (2 Questions)**
- a) Basic Instrument flying
  - b) Loss of situational awareness
- 13. Attitude flying** **6 Marks (3 Questions)**
- a) Flying with reference to the instruments
  - b) Establishing co-ordinated turns climbs and descends at various speeds and power setting
  - c) Relation between speed, power and attitude of aircraft
  - d) Definitions of standard rates of turns
- 14. Navigation** **6 Marks (3 Questions)**
- a) VOR / DME
  - b) NDB
  - c) ILS
  - d) TCAS
  - e) GPS / GPWS / EGPWS
- 15. Emergency Procedures** **8 Marks (3 Questions)**
- a) Choice of alternates/Point of no return
  - b) Communication failure
  - c) Power plant failure/Engine Fire
  - d) Emergency Evacuation
  - e) Unusual attitudes / Dynamics of unusual attitude
  - f) Recovery from unusual attitude

\*\*\*\*\*