

Nepal Airlines Corporation
Syllabus for written examination for the post of Jr. Co-Pilot, Grade- VII-B
Open Competition

A. Stages and Procedures of Examination System

Phases	Subject	Marks	Examination System	No. of Questions X Marks	Time
First 10%	Aptitude Test	Full Mark 20	1. Mental Abilities	2x4=8	20 Mins.
			2. Situational Judgment	2x2=4	
			3. Memory	2x1=2	
			4. Course of Action 5. Communication Skill	1x2=2 2x2=4	
Second 70%	Written Exam	Full Mark 100 Pass Mark 40	Objective Questions (50x2=100)		1 hr.
Third 20%	Interview	20	Oral (only of medically fit candidates)		

1. **Airframe and Systems.** **8 Marks (4 Questions)**
 - a) Airfoils
 - b) Flight Controls, Types and uses
 - c) Operational Procedures and limitations of power plants
 - d) Principle of operation of movable airfoils.

2. **Aerodynamics. (Theory of flight)** **8 Marks (4 Questions)**

3. **Aircraft Performance.** **8 Marks (4 Questions)**
 - a) Factors affecting aircraft performance/C.G
 - b) Use of various performance charts.
 - c) Limitations of aircraft operations.

4. **Flight planning.** **4 Marks (2 Questions)**
 - a) Selection of routes (IFR/VFR)
 - b) Necessity of obtaining weather briefing.

5. **Aircraft instrument.** **8 Marks (4 Questions)**
 - a) Basic flight instruments.
 - b) Basic navigation instruments.
 - c) Basic engine instruments.

6. **Air navigation.** **6 Marks (3 Questions)**
 - a) Great circle, small circles, rhumb lines.
 - b) Latitudes, longitudes.
 - c) Directions (Compass-true and magnetic, definitions, their interrelationships and use)
 - d) Magnetic compass.

7. **Charts.** **4 Marks (2 Questions)**

- 8. Meteorology.** **8 Marks (4 Questions)**
- a) Atmosphere and physical process.
 - b) Humidity and precipitation.
 - c) Clouds.
 - 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) Fatigue flying and health (alcohol, smoking, drugs and medication)

10. Operations Procedures and rules of the air. **12 Marks (6 Questions)**

- a) Definitions as per ICAO Annex 6.
- b) Flight operations.
- c) Aerodrome operating minima.
- d) Minimum flight altitude.
- e) Requirement for alternate aerodrome.
- f) Oxygen requirement.
- g) Duties and responsibilities of PIC and Co-Pilot.
- h) Equipment's required for aircraft on all flights.
- i) Fuel requirements.
- j) Safe carriage of dangerous goods.
- k) Flight safety (use of seat belts and shoulder harness, wake turbulence hazard)

11. Rules and regulations for CPL holders. **6 Marks (3 Questions)**

- b) Necessity, requirements, privileges, responsibility and limitations.
- c) Logging of flight time.
- d) Maintaining and renewal of license.

12. Basic requirement flying procedures. **6 Marks (3 Questions)**

- a) Basic instrument environment (Pitch, yaw, roll, power-primary and supporting instruments).
- b) Prevention of disorientation.

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 settings.
- 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, GPS, NDP, ILS, transponder, radio waves (frequency).

15. Emergency procedures.

6 Marks (3 Questions)

- a) Choice of alternates.
- b) Communication failure.
- c) Power plant failure
- d) ELT
- e) Unusual attitudes.
