ANNEX 1

Answer key for Preparatory Examination

1. What is a “controlled airspace”?

   a) airspace where traffic is controlled by an Air Traffic Control unit;
   b) airspace where safety regulations are always in effect;
   c) Class F airspace;
   d) Class D airspace.

2. What equipment is needed to fly a glider into Class B airspace?

   a) radio equipment;
   b) radio-navigation equipment;
   c) a Mode C transponder;
   d) All of the above.

3. What are the entry requirements for Class C airspace?

   a) aircraft must receive a clearance from ATC when flying VFR;
   b) no clearance is required;
   c) aircraft must be equipped with a 2-way radio but do not need a transponder;
   d) None of the above.

4. Except for the purposes of taking off, landing, attempting to take off or land and unless so instructed by ATC, no aircraft may overfly an aerodrome at less than:

   a) 2000 feet AGL;
   b) 1000 feet AGL;
   c) 500 feet AGL;
   d) 3000 feet AGL.

5. When two aircraft are converging, the glider must cede the right-of-way to :

   a) a commercial aircraft;
   b) a balloon;
   c) a helicopter;
   d) a dirigible.

6. What are the lifting agents?

a) mountain effect and valley effect;
b) stable and unstable air;
c) convection, radiation, advection and conduction;
d) Convection, orographic, frontal, mechanical turbulence, convergence.

7. After the passage of a cold front, the wind :

a) veers and becomes turbulent;
b) veers and becomes stable;
c) backs and becomes turbulent;
d) backs and becomes stable.

8. If the thermal gradient is strong, the air will be:

a) stable;
b) unstable;
c) the winds will be weak;
d) none of the above.

9. An "air mass" is defined as a large portion of the _____ possessing uniform characteristics of _____ and _____ in the horizontal. Find the missing words.

a) stratosphere, temperature, pressure;
b) tropopause, stability, pressure;
c) atmosphere, stability, humidity;
d) troposphere, temperature, humidity.

10. What is the effect of wind on the rate of climb of an aircraft?

a) no influence;
b) a headwind will increase the rate of climb;
c) a headwind will reduce the rate of climb;
d) a crosswind will affect the rate of climb.

11. After a hot and sunny morning, where are the best soaring conditions found?

a) over a forest;
b) over a large body of water;
c) over a hillside facing south;
d) on the lee side of a mountain.

12. Which side of a mountain range is dangerous?

a) windward side;
b) lee side;
c) over top;
d) all of the above.

13. At a constant airspeed in a level turn, the greater the inclination :

a) the greater the rate of turn;
b) the smaller the radius of turn;
c) the greater the load factor;
d) all of the above.

14. While on a transit flight in high tow position, the tow aircraft experiences a sudden loss of altitude. To correct the slack rope thus created, it is necessary:

a) to enter level flight;
b) to yaw away from the loop to reduce the glider's relative speed;
c) to dive behind the tow plane;
d) cable to release.

15. On some straight-winged aircraft, fin-like vertical surfaces are affixed to the upper surface of the wings to extend the laminar layer of airflow. These surfaces are called:

a) slats;
b) wing fences;
c) safety plates;
d) spoilers.

16. Swept-back wings ensure:

a) directional stability;
b) longitudinal stability;
c) lateral stability;
d) Both A and C.

17. A low-wing glider is on final with a crosswind. The pilot must:

a) Crab through the flare and landing;
b) a side-slip through the flare and landing;
c) crab on final, a sideslip through the flare and level wings on landing;
d) crab through the flare but land with the longitudinal axis parallel with the runway.

18. For a given aircraft, indicated stall speed:

a) is greater when flying downwind than when flying upwind;
b) increases with altitude;
c) decreases with altitude;
d) does not vary with altitude.

19. In which of these situations are the best thermalling conditions found?

a) in light winds;
b) in unstable air;
c) in humid air;
d) none of the above.

20. In a steep left turn onto final, there is a risk of :

a) a violent stall of both wings;
b) a stall of the right wing;
c) excessive bank;
d) a stall of the left wing.

21. The magnetic compass is not reliable :

a) in a turn;
b) on a north-south heading;
c) on an east-west heading;
d) in a climb or descent.

22. What happens to a magnetic compass when the aircraft accelerates on a West heading?

a) It indicates a turn to the South;
b) It leads the turn;
c) It indicates a turn to the North;
d) It lags the turn.

23. What is the purpose of a clearing S turn ?

a) Thermalling flight;
b) It is a signal for the tow plane;
c) To check for traffic;
d) It gives the passengers a better view.

24. What effect would a flight from a low pressure area to a high pressure area have on the altimeter?

a) It will read high;
b) It will read low;
c) it will not be affected;
d) It will indicate a greater altitude than the real one.

25. When must the pilot of a glider file a flight plan?

a) When flying further than 50 NM from the point of departure;
b) depart When flying further than 25 NM from the point of departure;
c) Gliders are not required to file flight plans;
d) No flight plan is necessary if the glider is equipped with an ELT.

26. What does "Controlled Airspace" mean?

a) The airspace surrounding an airport;
b) Airspace of defined dimensions inside which all air traffic is controlled;
c) Airspace immediately overhead an airport;
d) Airspace inside which Air Traffic Control services are guaranteed..

27. An aircraft is at 500 feet AGL over an un-controlled airport. In what class of airspace is this aircraft?

a) Class B airspace;
b) Class D airspace;
c) Class E airspace;
d) Class G airspace.

28. degrees If you are flying North-West, what is your heading in degrees?

a) 120.
b) 045.
c) 330.
d) 270.

29. If you are flying 135°, in what cardinal direction are you flying?

a) North.
b) South.
c) South-East.
d) North-West.

30. If you fly directly North, what will your compass read?

a) 180 degrees.
b) 090 degrees.
c) 270 degrees.
d) 000 degrees.

31. Twenty minutes after take-off, you estimate that you have covered 50 NM. What is your groundspeed?

a) 70 KTS.
b) 150 KTS.
c) 30 KTS.
d) 1000 KTS.

32. You are planning a flight from Gimli, MAN to Brandon MAN. The distance is 150 NM and you are planning a speed of 75 KTS. How long will it take you to get to Brandon?

a) 1 : 55.
b) 1 : 30.
c) 2 : 00.
d) 2 : 15.

33. You are on a navigation flight and decide to calculate the distance you have covered. You know that your speed has been 105 kts for about 30 minutes. How far are you from your point of departure?

a) 75 NM.
b) 52.5 NM.
c) 55 NM.
d) 48.5 NM.

34. What is the shape of the planet Earth?
a) Oblong rectangle
b) Circle
c) Oblate Spheroid
d) Octagon

35. This type of imaginary line divides the earth in two equal halves; a section of this line will be the shortest distance between two points on the planet's surface.

a) Isogonic line
b) Isotherm
c) Rhumb line
d) Great Circle

36. This type of line cuts all meridians at an equal angle.

a) Great Circle
b) isobar.
c) Parallel of Latitude
d) Rhumb line.

37. What term refers to the angle between a magnetic meridian and a geographic meridian?

a) Magnetic deviation.
b) Magnetic inclination.
c) Magnetic variation.
d) Deceleration.

38. What is the term which refers to a light which joins areas of equal magnetic variation?

a) Agonic line
b) Isogonic line
c) Isotherm
d) Isobar

39. What term refers to the line which joins areas of zero magnetic variation ?

a) Agonic line
b) Isogonic line
c) Isotherm
d) Isobar

40. Using the Standard Phonetic Alphabet, spell "BRAINS".

a) Boston Roger Almond Italy Nicole Sugar
b) Bravo Romeo Alpha India November Sierra
c) Baker Robert Able Italy New York Suzanne
d) Bravo Romeo Alpha India November Susan

41. What effect does a coating of frost on the wing profile of an aircraft in flight have on that aircraft's stall speed?

a- The stall speed in unchanged.
b- The stall speed is will be reduced in all situations.
c- The stall speed increases in level flight only.
d- The stall speed will increase in all situations.

42. In a spin, the ailerons are _____ and indicated airspeed is _____.

a- firm; constant
b- loose; increased
c- firm ; increased
d- loose; constant

43- In what direction to the vortices turn behind the wingtip of an aircraft?

a- Counter-clockwise behind both wingtips.
b- Clockwise behind both wingtips.
c- Clockwise behind the left wingtip and counter-clockwise behind the right wingtip.
d- Counter-clockwise behind the left wingtip and clockwise behind the right wingtip.

44. The mass of an aircraft affects which of the following points?

a- Centre of Pressure
b- Centre of Reaction
c- Centre of Gravity
d- Centre of Aircraft

45. What term refers to the imaginary line running from a point on the leading edge to a corresponding point on the trailing edge of a wing?

a- longeron
b- wingspan
c- chord
d- camber

46. What is the relationship between induced drag and the aspect ratio of a glider?

a- Aspect ratio diminishes when angle of attack is low.
b- If aspect ratio is high, induced drag is low.
c- If aspect ratio is low, induced drag is reduced.
d- The relationship between induced drag and aspect ratio varies in function of the indicated airspeed.

47. What is the angle of incidence?

a- The angle between the airfoil and the relative airflow.
b- The angle between the chord line and a longitudinal reference line on the fuselage.
c- The angle between a transversal reference line on the fuselage and the relative airflow.
d- The angle between a longitudinal reference line on the fuselage and the chord of the horizontal stabiliser.

48. What happens to the centre of Pressure of the airfoil when the angle of attack increases and approaches the stall angle?

a- It moves forward
b- It moves backward
c- It stays momentarily
d- Nothing

49. What is inherent stability?

a- Stability due to the aircraft's general tendency to return to it's original flight trajectory.
b- Stability due to the design of the aircraft.
c- Stability due to the aircraft's tendency to return to its initial flight trajectory.
d- Stability due to dihedral.

50. What is the dihedral angle?

a- The angle between the wing and a vertical line.
b- angle between the wing and a horizontal line.
c- The angle between the wing and horizontal stabiliser.
d- The angle between the wing and the fuselage.

51. Coarse pitch is used when:

a- The aircraft is in cruise flight;
b- the aircraft is climbing;
c- the aircraft is descending;
d- the wings are stalled;

52. If I can change the pitch of my propeller blades only on the ground I have a _____ propeller:

a- Fixed-pitch
b- Controllable
c- adjustable
d- Constant Speed

53. On high-performance, low-wing aircraft, the fuel system is fed:

a- by gravity
b- by engine vibrations
c- by the turbocharger
d- by pump

54. What is the purpose of a tachometer?

a- Indicates the power generated by the engine in Revolutions Per Minute.
b- Indicates the temperature of the engine
c- Indicates the speed of the aircraft
d- Indicates the fuel remaining

55. What are the consequences of applying carb heat?

a- An increase in power
b- a reduction in power
c- engine shutdown
d- no effect