1. The force which acts vertically downward through the centre of gravity is called:
   A. lift
   B. weight
   C. thrust
   D. drag

2. Longitudinal stability is stability around the lateral axis of the aircraft and is called pitch stability. The two principle factors which influence longitudinal stability are ______________ and ______________.
   A. Size and position of the horizontal stabilizer, the position of the C of G
   B. Dihedral, the position of the C of G
   C. Sweepback, the position of the C of R
   D. Keel effect, the position of the fin

3. A trim tab:
   A. is an adjustable tab either fixed or hinged to a control surface.
   B. eliminates the need for excessive force on the controls.
   C. Both A and B
   D. None of the above

4. An aircraft will stall at any airspeed or attitude if the _______ is exceeded.
   A. Critical angle of attack
   B. Centre of gravity
   C. Best lift/drag ratio
   D. Best angle of climb

5. ____________ drag is caused by those parts of an airplane that produce lift and therefore cannot be completely eliminated.
   A. Form
   B. Parasite
   C. Interference
   D. Induce

6. Which of the following materials or devices are shock absorbers:
   A. Rubber
   B. Spring steel
   C. Low pressure tires
   D. All of the above

7. If an aircraft is rolling to the right aileron drag will cause the aircraft to yaw to the _______.
   A. Left
   B. Right
   C. No adverse yaw will be present
   D. None of the above
8. __________ is a term used to describe the direction of the airflow with respect to the wing.
   A. Angle of attack
   B. Angle of incidence
   C. Relative airflow
   D. Angle of deviation

9. The initial tendency of an aircraft to return to its original position is known as __________ stability.
   A. Neutral
   B. Dynamic
   C. Directional
   D. Static

10. The __________ is the angle that each wing makes with the horizontal. The purpose of this angle is to improve lateral stability.
    A. Angle of incidence
    B. Dihedral angle
    C. Sweepback angle
    D. Dynamic angle

11. __________ drag refers to drag created by the shape of a body as it resists motion through the air.
    A. Parasite
    B. Form
    C. Induced
    D. Interference

12. The __________ axis extends from ________ to ________ of an aircraft.
    A. Longitudinal, wingtip, wingtip
    B. Normal, nose, tail
    C. Lateral, wingtip, wingtip
    D. None of the above

13. The steeper the angle of bank for any given airspeed: ________________
    A. The larger the radius of turn
    B. The greater the rate of turn
    C. The higher the stalling speed
    D. Both B and C

14. In a climb from the surface to several thousand feet AGL, the wind will __________ and __________.
    A. Back and decrease
    B. Back and increase
    C. Veer and decrease
    D. Veer and increase
15. In the ICAO standard atmosphere the rate of decrease of temperature with height is ________ per 1,000 feet.
   A. 15°C
   B. 1.98°C
   C. 3°C
   D. 5°C

16. In weather, an inversion is a layer in which the temperature ________ throughout a layer of some depth.
   A. remains constant
   B. increases
   C. decreases
   D. None of the above

17. On a Graphic Area Forecast (GFA) locations of the same Mean Sea Level (MSL) pressure are joined by:
   A. Isobaric lines
   B. Isogonic lines
   C. Agonic lines
   D. rhumb lines

18. An airplane is 1 mile off of its intended track after travelling 30 miles. The error in the track is approximately ________
   A. 1 degree
   B. 2 degrees
   C. 3 degrees
   D. 4 degrees

19. On east and west headings, deceleration causes the compass to register a turn toward ________
   A. North
   B. South
   C. East
   D. West

20. With reference to this weather report:
    SPECI CYOW 301611Z 08020G30KT 2 1/2SM -FZRA OVC014 M03/M05 A2974
    RMK SC8 SLP077=
    you determine:
    A. The visibility is 2.5 statute miles
    B. The ceiling is 1400 ft
    C. Light freezing rain is falling
    D. All of the above

21. When a given mass of air is heated and no new water vapour is added, the relative humidity of the air ________
   A. Remains the same
   B. Increases
   C. Decreases
   D. Becomes saturated
22. When two aircraft are approaching head-on or approximately so, each should alter heading to ________ in order to avoid any danger of collision.
   A. The right  
   B. The left  
   C. The left and right respectively  
   D. Above and below

23. The length of a nautical mile is ____________, a statute mile is ____________.
   A. 6080 ft, 6020 ft  
   B. 5280 ft, 6080 ft  
   C. 6080 ft, 5280 ft  
   D. 6080 ft, 5820 ft

24. The track made good is:
   A. The proposed path of the airplane over the ground.  
   B. The actual path of the airplane over the ground.  
   C. The angle between the proposed path of the airplane over the ground and the actual path.  
   D. The angle between the proposed path of the airplane over the ground and the actual path measured either left or right of the required track.

25. Altostratus clouds fall into which category of clouds?
   A. Low  
   B. Middle  
   C. High  
   D. Vertical development

26. A sea breeze occurs during the _________ and the wind blows from the _________ to the _________.
   A. Day, land, water  
   B. Day, water, land  
   C. Night, land, water  
   D. Night, water, land

27. The mature stage of a thunderstorm cell is marked by the ____________.
   A. Appearance of the top of the cell spreading out into an anvil structure  
   B. Presence of heavy downdrafts  
   C. Appearance of precipitation on the ground  
   D. All of the above

28. Terminal Aviation Forecasts (TAFs) are issued at least ____________ times daily and are valid for at least _______.
   A. 24, 90 minutes  
   B. 4, 24 hours  
   C. 6, 4 hours  
   D. 2, 36 hours
29. A pilot shall not fly an aircraft within the period of ______________ hours after donating blood.
   A. 12
   B. 48
   C. 24
   D. 8

30. What is the VHF emergency frequency?
   A. 123.45 MHz
   B. 121.50 MHz
   C. 243.00 MHz
   D. 123.00 MHz

31. The angle between true meridian and magnetic meridian is called ______.
   A. Compass heading
   B. Deviation
   C. Angle of incidence
   D. Variation

32. The only pitot static instrument that requires both a pitot pressure source and a static pressure source is the ________________.
   A. Vertical speed indicator
   B. Airspeed indicator
   C. Altimeter
   D. Attitude indicator

33. To relieve back stick pressure in a nose high attitude the trim tab must be deflected ______.
   A. Up
   B. Neutral
   C. Down
   D. None of the above

34. As an aircraft climbs and altitude increases the stalling speed (IAS) of an aircraft ________.
   A. Remains the same
   B. Increases
   C. Decreases
   D. Depends on the density altitude.

35. ________ is movement about the vertical or normal axis and is controlled by the ________.
   A. Yaw, rudder
   B. Roll, ailerons
   C. Pitch, elevator
   D. Side slip, elevator
36. Given: Distance flown: 240 statute miles, Time required: 3 hours, the ground speed will be _____.
   A. 80 knots
   B. 80 MPH
   C. 48 MPH
   D. 45 MPH

37. Given: Track 090°T, Variation 12°W, Deviation 3°E, what is the compass heading?
   A. 081°
   B. 099°
   C. 105°
   D. 075°

38. In a straight and level flight an aircraft has a load factor of 1, or 1G. A 60° bank turn produces a load factor of _______.
   A. 2
   B. 1.5
   C. 3.86
   D. 1.04

39. The aspect ratio of a wing is computed by dividing the span by the _________.
   A. Camber
   B. Length
   C. Average chord
   D. Weight

40. Which of the following is not a method of classifying an airplane.
   A. Number and position of wings in relation to the fuselage.
   B. Passenger carrying capability
   C. Number of engines
   D. Configuration of undercarriage

**END OF EXAM FOR GLIDER APPLICANTS ONLY**
41. Given: Magnetic Track 090°, Wind 270° Magnetic at 20 knots, True Airspeed 100 knots, Trip Distance 300 nautical miles, the estimated time enroute is:
   A. 2 hours 30 minutes
   B. 3 hours
   C. 3 hours 45 minutes
   D. 2 hours 45 minutes

42. Given: wind from 226°T at 8 knots, True Airspeed 129 knots a True course of 164°T, Variation 14°W and Deviation of 4°E, find the Ground Speed and Magnetic Heading.
   A. 125 knots, 167°M
   B. 125 knots, 177°M
   C. 125 knots, 181°M
   D. 125 knots, 185°M

43. The purpose of a dual ignition system (two spark plugs in each cylinder and two magnetos is for
   A. Safety
   B. Performance
   C. Fuel economy
   D. Both A and B

44. If the exhaust valve were to close 20 degrees late on the exhaust stroke this would mean that
   both valves would be open at the same time. When this occurs the valves are said to be
   A. In sync
   B. Fitted
   C. Overlapped
   D. Congruent

45. Which of the following is not one of the four functions of lubricating oil:
   A. Cooling
   B. Sealing
   C. Lubrication
   D. Combustion

46. Which of the following will not happen if the engine is run at too rich a mixture:
   A. Detonation
   B. Carbon build up and fouling
   C. Unburned fuel in the exhaust
   D. The engine will run cool

47. Which of the following is not a function of the carburetor:
   A. Vaporize the fuel
   B. Mix fuel with air in proper proportions
   C. Control the volume of fuel/air mixture delivered to the engine
   D. Heat the fuel air mixture to prevent icing.
48. The distance in feet a propeller travels forward in one revolution is called _______.
   A. Pitch
   B. Roll
   C. Inclination
   D. Rate

49. In air cooled engines _________ are added to the cylinders to provide a greater area of metal to dissipate the heat.
   A. Fins
   B. Trim tabs
   C. Ribs
   D. Hot Plates

50. Octane numbers go only as high as 100. Beyond this number the anti knock value of the fuel is expressed as a _____________.
   A. Octane rating
   B. Viscosity level
   C. Performance number
   D. MOGAS specification