

**QUESTIONS 1 - 40****TO BE ANSWERED****BY BOTH GLIDER AND POWER APPLICANTS**

1. The main members in a wing which run the length of the wing from wing root to wingtip and carry most of the load are called \_\_\_\_\_.
  - a. Ribs
  - b. Longerons
  - c. Stringers
  - d. Spars
  
2. The complete tail section of an airplane is called the \_\_\_\_\_.
  - a. Empennage
  - b. Stabilator
  - c. Canard
  - d. Elevators
  
3. As the angle of attack of an airfoil is increased up to the point of stall, the centre of pressure will move \_\_\_\_\_.
  - a. Back
  - b. Forward
  - c. Up
  - d. Will not move
  
4. \_\_\_\_\_ drag is caused by those parts of an airplane that produce lift and therefore cannot be completely eliminated.
  - a. Parasite
  - b. Form
  - c. Induced
  - d. Interference
  
5. Spoilers are devices fitted to the wing which increase \_\_\_\_\_ and decrease \_\_\_\_\_.
  - a. Drag, lift
  - b. Lift, drag
  - c. Weight, lift
  - d. Speed, drag

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6. Movement of the aircraft around the vertical or normal axis is called \_\_\_\_\_, and is controlled by movement of the \_\_\_\_\_.
- Roll, rudder
  - Yaw, rudder
  - Pitch, elevators
  - Yaw, ailerons
7. When gliding into a fairly strong head wind, greater distance may be covered over the ground if the speed is kept \_\_\_\_\_ the best lift/drag ratio speed.
- Slightly slower than
  - Much slower than
  - Slightly faster than
  - At
8. An aircraft will stall at any airspeed or attitude if the \_\_\_\_\_ is exceeded.
- Critical angle of attack
  - Centre of gravity
  - Best lift/drag ratio
  - Best angle of climb
9. The maximum speed at which an airplane can be safely operated in smooth air is called \_\_\_\_\_.
- Maneuvering speed ( $V_a$ )
  - Normal operating limit speed ( $V_{no}$ )
  - Max flap down speed ( $V_{fe}$ )
  - The never exceed speed ( $V_{ne}$ )
10. In some ways a spiral dive resembles a spin. However, in a spin the airspeed is \_\_\_\_\_. In a spiral the airspeed is \_\_\_\_\_.
- Constant and low, increases rapidly
  - Increases rapidly, is constant and low
  - Constant and low, remains the same
  - Increasing, decreases
11. The point at which the boundary layer changes from laminar to turbulent is called the \_\_\_\_\_.
- Centre of pressure
  - Transition point
  - Centre of gravity
  - Aileron drag

12. 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
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. The only pilot 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
15. In straight and level flight an aircraft has a load factor of 1, or 1 G. A 60° bank turn produces a load factor of \_\_\_\_\_.
- a. 2
  - b. 1.5
  - c. 3.86
  - d. 1.04
16. The aspect ratio of a wing is computed by dividing the span by the \_\_\_\_\_.
- a. Camber
  - b. Length
  - c. Average chord
  - d. Weight
17. Induced drag \_\_\_\_\_ as the speed of an airplane increases.
- a. Decreases
  - b. Remains the same
  - c. Increases
  - d. None of the above

18. The \_\_\_\_\_ of an airfoil is the curvature of the upper and lower surfaces.
- a. Chord
  - b. Camber
  - c. Pressure
  - d. Span
19. The tendency of an aircraft in flight to remain in straight, level, upright flight and return to this attitude, if displaced, without the corrective action of the pilot is called \_\_\_\_\_.
- a. Balance
  - b. Instability
  - c. Equilibrium
  - d. Stability
20. Most of the "weather" occurs in the \_\_\_\_\_ because of the presence of water vapour and strong vertical currents.
- a. Troposphere
  - b. Tropopause
  - c. Stratosphere
  - d. Mesosphere
21. 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
22. Clouds from which precipitation falls are designated \_\_\_\_\_ clouds.
- a. Cirrus
  - b. Cumulus
  - c. Stratus
  - d. Nimbus

23. In the new METAR weather reporting code the sky is divided in 8 segments called oktas. The sky condition FEW means that \_\_\_\_\_ oktas (8ths) or less of the sky is covered by clouds.
- a. 2
  - b. 3
  - c. 4
  - d. 5
24. Lines on a weather map that join areas of equal barometric pressure are called \_\_\_\_\_.
- a. Contour lines
  - b. Pressure gradient
  - c. Isobars
  - d. Agonic lines
25. Where the isobars are very close together, the pressure gradient is steep and the wind is \_\_\_\_\_.
- a. Strong
  - b. Light
  - c. Variable
  - d. Cold
26. A \_\_\_\_\_ is a rapid and irregular fluctuation 'in wind speed and direction caused by mechanical turbulence and by unequal heating of the earth's surface.
- a. Squall
  - b. Gust
  - c. Mountain wave
  - d. Veer
27. 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

28. Air that will resist upward or downward displacement and tends to return to its original horizontal level is said to be \_\_\_\_\_.
- a. Unstable
  - b. Saturated
  - c. Sublimation
  - d. Stable
29. The temperature that air must be cooled at a constant pressure to become saturated is called \_\_\_\_\_.
- a. Dew point
  - b. Relative humidity
  - c. Fahrenheit
  - d. Isothermal layer
30. The dangers associated with the passage of a thunderstorm are \_\_\_\_\_.
- a. Strong, gusty winds and turbulence
  - b. Heavy rain and hail
  - c. Lightning
  - d. All of the above
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METAR CYZX 182000Z CCA 120 15G20 KT 3/4SM R13/4000 FT/D +SN BLSN BKN  
005 OVC 020 M02/M05/A3000 REPE WS RWY 13 RMK SF 6 SC 2 VIS 1/4 TONE SLP  
990

(Use this Aviation Routine Weather Report to answer questions 31 - 34)

31. The term CCA means \_\_\_\_\_.
- a. The 3 letter identifier of the reporting station
  - b. That this is a special report
  - c. This is the first correction of a report taken on the 18<sup>th</sup> day of the month at 2000 UTC
  - d. None of the above
32. The present weather is \_\_\_\_\_.
- a. Light snow and heavy blowing snow
  - b. Moderate snow and moderate blowing snow
  - c. Heavy snow and moderate blowing snow
  - d. None of the above
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33. The temperature and dew point are \_\_\_\_\_.
- a. 2°F, 5°F
  - b. -20°C, -5°C
  - c. -20° F, -50°F
  - d. 2°C, 50°F
34. The altimeter setting is \_\_\_\_\_.
- a. 30.00 inches of mercury
  - b. 29.90 inches of mercury
  - c. 1030.0 hectopascals
  - d. 990.0 hectopascals
35. An aerodrome forecast (TAF) is issued at least \_\_\_\_\_ times daily.
- a. 2
  - b. 4
  - c. 6
  - d. 8
36. The shortest distance between two points on the surface of the earth is represented by a \_\_\_\_\_.
- a. Rhumb line
  - b. True heading
  - c. Magnetic meridian
  - d. Great circle
37. The angle between true heading and magnetic heading is called \_\_\_\_\_.
- a. Variation
  - b. Magnetic dip
  - c. Deviation
  - d. Turning error
38. Given: Track = 090°T  
Variation = 12°W  
Deviation = 3°E
- What is the compass heading?
- a. 081°
  - b. 099°
  - c. 105°
  - d. 075°

39. The radio phrase "OVER" means \_\_\_\_\_.
- a. My transmission is ended. I do not expect a reply from you
  - b. I will repeat
  - c. My transmission has ended. I expect a reply from you
  - d. Okay, I have received your message
40. 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

**END OF EXAM FOR GLIDER APPLICANTS ONLY**

41. When thrust and drag are equal and opposite, the airplane is said to be in a state of \_\_\_\_\_.
- a. Balance
  - b. Equilibrium
  - c. Acceleration
  - d. Stability
42. The type of engine most commonly used in general aviation airplanes is \_\_\_\_\_.
- a. Radial
  - b. In line
  - c. Turbo-jet
  - d. Horizontally opposed
43. The main functions of lubricating oil are \_\_\_\_\_.
- a. Cooling
  - b. Sealing
  - c. Flushing
  - d. All of the above

44. 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

45. The function of the propeller is to convert the torque, or turning moment of the crankshaft into \_\_\_\_\_, or forward speed.
- a. Thrust
  - b. Drag
  - c. Slip
  - d. Skid

46. Given: Distance flown = 240 statute miles  
Time required = 3 hours

Then the ground speed will be \_\_\_\_\_.

- a. 80 knots
  - b. 80 MPH
  - c. 48 MPH
  - d. 45 MPH
47. 100 nautical miles = \_\_\_\_\_ statute miles.
- a. 115
  - b. 87
  - c. 132
  - d. 40

48. Given: Track = 360°T  
Variation = 10°E  
Deviation = 4°W  
TAS = 150 MPH  
Wind = 020°T at 40 knots

What is the resultant ground speed and compass heading to maintain track?

- a. 106 MPH, 360°
- b. 112 MPH, 360°
- c. 196 MPH, 012°
- d. 196 MPH, 036°

49. Under certain moist atmospheric conditions it is possible for carburetor icing to occur when air temperature is in the range of approximately \_\_\_\_\_ to \_\_\_\_\_.
- a. -5°F, 30°F
  - b. -5°C, 30°C
  - c. -30°F, 5°F
  - d. -30°C, 5°C
50. To avoid wake turbulence when following an aircraft that has just landed, plan to touch down the point where the preceding aircraft touched down.
- a. Beyond
  - b. Short of
  - c. At
  - d. Close to

**END OF EXAM**