

2675-203/ 4597-003 Aircraft Aerodynamics and Control

Sample questions



Candidate name

Date

When completing these sample questions and the final assessment (online) it is important to read the question and each option carefully before selecting a response.

- 1 Which **one** of the following is **not** an ISA atmospheric standard at sea level?
 - a. Air is humid.
 - b. Temperature is 15 degrees Celsius.
 - c. Pressure is 1013.25 Millibars.

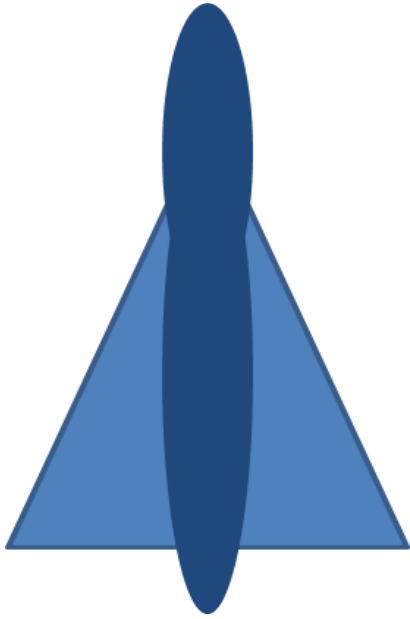
- 2 Which law describes the relationship between volume and temperature for ideal gasses?
 - a. Boyles' Law.
 - b. Charles' Law.
 - c. Gay-Lussac's law.

- 3 Where does a stagnation point occur on an aerofoil?
 - a. Leading edge.
 - b. Trailing edge.
 - c. Mean camber line.

- 4 Which type of drag is directly associated with the creation of lift?
 - a. Induced.
 - b. Form.
 - c. Profile.

5 Which **one** of the following diagrams shows a Delta wing?

a



b.



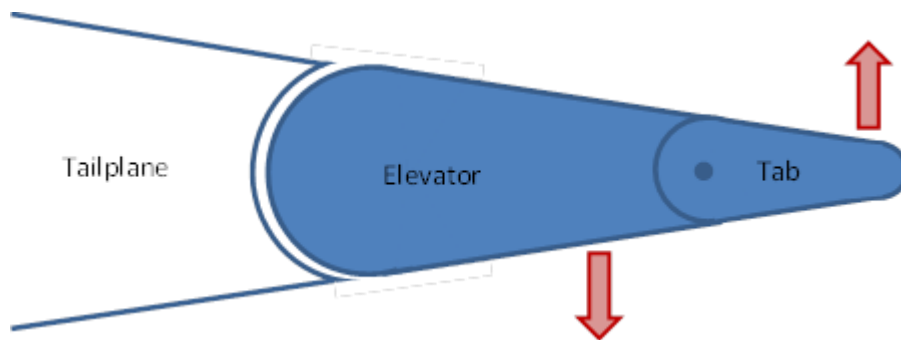
c



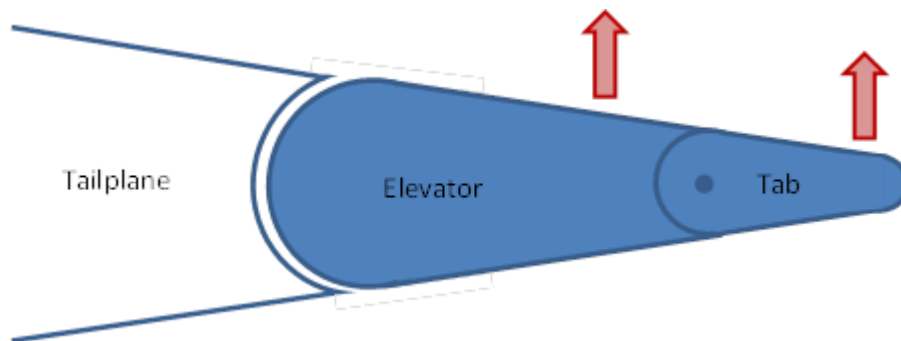
- 6 What happens to the transition point as an aircraft approaches stalling angle?
- Moves forward.
 - Moves aft.
 - Moves down.
- 7 Tailplanes provide a balancing effect in which axis?
- Longitudinal.
 - Lateral.
 - Vertical.
- 8 What happens to the stalling angle of an aircraft when in a turn?
- Remains constant.
 - Increases.
 - Decreases
- 9 Which aircraft characteristics typically cause Dutch roll susceptibility?
- Weak longitudinal stability compared to lateral stability.
 - Weak directional stability compared to lateral stability.
 - Weak lateral stability compared to directional stability.
- 10 Which stability is **most** greatly improved by setting the main plane at a dihedral angle?
- Lateral.
 - Longitudinal.
 - Directional.
- 11 Which direction will ailerons and rudder move in a coordinated turn to the left?
- LH aileron up, RH aileron down and rudder left.
 - LH aileron down, RH aileron up and rudder left.
 - LH aileron up, RH aileron down and rudder right.
- 12 Where are wing fences **most** commonly fitted on aerofoils?
- Wing tip.
 - Leading edge.
 - Upper surface.
- 13 What is the purpose of an anti-balance tab?
- Assist movement of control surface.
 - Increase pilot 'feel'.
 - Prevent surface flutter.

Which **one** of the diagrams shows the direction of movement of an anti-balance tab and associated elevator with a nose up moment applied?

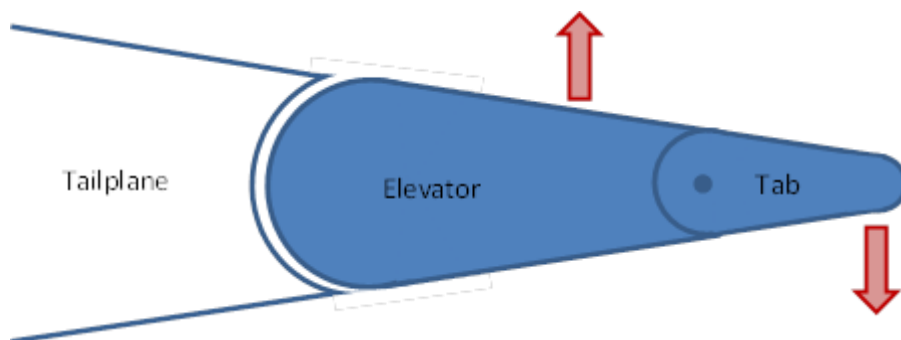
a.



b.



c.



- 15 How does a bow wave occur as an aircraft approaches the speed of sound?
- a. Boundary layer increases beyond trailing edge.
 - b. Air behaves as if it's incompressible.
 - c. Pressure waves build up in front of the aircraft.

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Control
Answers**



- 1 A**
- 2 B**
- 3 A**
- 4 A**
- 5 A**
- 6 A**
- 7 A**
- 8 C**
- 9 B**
- 10 A**
- 11 A**
- 12 C**
- 13 B**
- 14 B**
- 15 C**