Status	Finished
Started	Thursday, 11 September 2025, 8:52 AM
Completed	Thursday, 11 September 2025, 8:52 AM
Duration	7 secs
Marks	0.00/35.00
Grade	**0.00** out of 100.00
Feedback	You must review all the course material and the end of chapter quick quizzes, for all the chapters covered, before you re-attempt this test.

Question 1

Not answered

Marked out of 1.00

Rotation around the longitudinal axis is called:

- yawing.
- slipping.
- rolling.
- pitching.

The correct answer is: rolling.

Question 2

Not answered

Marked out of 1.00

If an aircraft is to return to equilibrium after an initial disturbance, it must have _____ dynamic stability and it _____ positive static stability.

- positive; need not have.
- neutral; must have.
- positive; must have.
- negative; must have.
- negative; need not have.

The correct answer is: positive; must have.

Question 3

Not answered

Marked out of 1.00

An aeroplane which has low static lateral stability is more prone to have controllability problems in:

- yaw only
- roll and yaw
- roll and pitch
- roll only

The correct answer is: roll and yaw

Question 4

Not answered

Marked out of 1.00

When an aeroplane has zero static longitudinal stability, the pitching moment coefficient CM versus angle of attack line:

- has a positive slope.
- has a negative slope.
- is vertical.
- is horizontal.

The correct answer is: is horizontal.

Question 5

Not answered

Marked out of 1.00

Which of the following statements about directional stability are correct? Mark all correct answers.

- Directional stability increases slightly with fin sweepback.
- Fuselage pitch angle has little effect on directional stability.
- A straight wing has a very small effect on directional stability.
- For an aircraft with an aft CG, the fuselage becomes destabilising at large β angles
- Static directional stability increases with sweepback angle.

The correct answers are: Static directional stability increases with sweepback angle., A straight wing has a very small effect on directional stability., Fuselage pitch angle has little effect on directional stability., For an aircraft with an aft CG, the fuselage becomes destabilising at large β angles

Question 6

Not answered

Marked out of 1.00

Longitudinal stability _____ with altitude.

- remains constant.
- increases.
- reduces.

The correct answer is: reduces.

Question 7

Not answered

Marked out of 1.00

For manual controls, the amount of force needed to change elevator deflection _____ with IAS and _____ with altitude.

- decreases; decreases.
- increases; decreases.
- decreases; increases.
- increases; increases.

The correct answer is: increases; decreases.

Question 8

Not answered

Marked out of 1.00

Sideslip or yaw angle (β) is the angle between the _____ axis and the relative air flow.

- lateral
- longitudinal

The correct answer is: longitudinal

Question 9

Not answered

Marked out of 1.00

Which 2 of the following statements are correct?

- The wing contributes to longitudinal static stability because the AC is forward of the CG.
- The fuselage has a stable pitching moment because its CP almost always lies ahead of its CG.
- Increased wing camber increases longitudinal stability.
- An excessively aft CG reduces stick force stability.
- The horizontal stabiliser is by far the most important contributor to longitudinal static stability.

The correct answers are: The horizontal stabiliser is by far the most important contributor to longitudinal static stability., An excessively aft CG reduces stick force stability.

Question 10

Not answered

Marked out of 1.00

Aircraft with positive static directional stability create yawing moments in the _____ direction as the sideslip.

- opposite
- same
- perpendicular
- parallel

The correct answer is: same

Question 11

Not answered

Marked out of 1.00

As the stability of an aeroplane decreases:

- there is no effect on its stability.
- its tendency to tuck under decreases.
- its manoeuvrability increases.
- its manoeuvrability decreases also.

The correct answer is: its manoeuvrability increases.

Question 12

Not answered

Marked out of 1.00

In a skidding turn (the nose pointing inwards), compared with a co-ordinated turn, the bank angle (i) and the "ball" or slip indicator (ii) are respectively:

- (i) too small, (ii) dlsplaced towards the high wing.
- (i) too large, (ii) displaced towards the high wing.
- (i) too large, (ii) displaced towards the low wing.
- (i) too small, (ii) displaced towards the low wing.

The correct answer is: (i) too small, (ii) dlsplaced towards the high wing.

Question 13

Not answered

Marked out of 1.00

Why are Vortex generators mounted on the upper wing surface?

- To combat the interference drag of the trailing edge flaps.
- To increase the effectiveness of the spoiler due to increase in parasite drag.
- To energise the boundary layer.
- To decrease the stall speed by increasing spanwise flow over the wing.

The correct answer is: To energise the boundary layer.

Question 14

Not answered

Marked out of 1.00

Static and dynamic stability decrease with altitude because of the reduced effect of _____ _____.

- aerodynamic damping
- the elevators

The correct answer is: aerodynamic damping

Question 15

Not answered

Marked out of 1.00

The danger of designing an aircraft with low stick force per g is that:

- There is no feel.
- It is very easy to overstress the aircraft.
- It affects longitudinal static stability.
- The aircraft becomes too stable.

The correct answer is: It is very easy to overstress the aircraft.

Question 16

Not answered

Marked out of 1.00

Increased Mach number _____ the tendency for Dutch roll because _____ compressibility effects create higher asymmetric drag on the wings.

- decreases; increased
- decreases; reduced
- increases; increased
- increases; reduced

The correct answer is: increases; increased

Question 17

Not answered

Marked out of 1.00

Which of the following statements are correct? Mark all correct answers.

- A dorsal fin reduces dihedral effect, a ventral fin contributes to it.
- A high wing increases static lateral stability. A low wing reduces it.
- Sweep angle increases lateral static stability.
- Dihedral increases static lateral stability. Anhedral reduces it.
- A high vertical fin increases static lateral stability.

The correct answers are: Dihedral increases static lateral stability. Anhedral reduces it., A high wing increases static lateral stability. A low wing reduces it., Sweep angle increases lateral static stability., A high vertical fin increases static lateral stability.

Question 18

Not answered

Marked out of 1.00

Considering the longitudinal stability of an aeroplane, why does the stick force per 'g' decrease with pressure altitude, at a given IAS?

- Because increasing pressure altitude produces a smaller aerodynamic damping.
- Because the aeroplane has a greater longitudinal stability at higher pressure altitude.
- Because the manoeuvring point is in front of the neutral point at a higher pressure altitude.
- Because increasing pressure altitude produces a bigger aerodynamic damping.

The correct answer is: Because increasing pressure altitude produces a smaller aerodynamic damping.

Question 19

Not answered

Marked out of 1.00

At the trim point CN is zero. Provided there is no asymmetric thrust, or other aerodynamic loading, then β will be _____.

- positive.
- negative.
- zero.

The correct answer is: zero.

Question 20

Not answered

Marked out of 1.00

The principal contributor to longitudinal stability is the horizontal stabiliser. This device acts around the aircraft's _____ axis.

- longitudinal.
- lateral.
- normal.

The correct answer is: lateral.

Question 21

Not answered

Marked out of 1.00

Because of the risk of Dutch Roll, an aircraft must not be dispatched if its _____ is unserviceable.

- flight director
- yaw damper
- autopilot

The correct answer is: yaw damper

Question 22

Not answered

Marked out of 1.00

The aerodynamic moment:
Is zero at all angles of attack for a _____ aerofoil.
Is negative for a _____ cambered aerofoil.

- cambered; positively.
- symmetrical; positively.
- cambered; negatively.
- symmetrical; negatively.

The correct answer is: symmetrical; positively.

Question 23

Not answered

Marked out of 1.00

You are departing an airfield surrounded by mountainous terrain on three sides. The departure procedures after take-off from the active runway require a 180 degree turn onto the reciprocal of runway heading. Assuming the turn is made with the maximum allowed bank angle of 30 degrees, the pilot should ensure terrain clearance by:

- Increase aircraft speed, to reduce turn radius as much as possible.
- Leave the gear extended, to increase parasite drag.
- Increase aircraft speed, to complete the turn as quickly as possible.
- Observing published speed limits until the turn is complete.

The correct answer is: Observing published speed limits until the turn is complete.

Question 24

Not answered

Marked out of 1.00

The CG is normally _____ of the AC. This produces a _____ pitching moment.

- aft; nose-up.
- aft; nose-down.
- forward; nose-down.
- forward; nose-up.

The correct answer is: forward; nose-down.

Question 25

Not answered

Marked out of 1.00

Which of the following statements about longitudinal stability are correct? Mark all correct answers.

- The manufacturer's forward CG limit ensures an arm that is long enough to produce a sufficiently strong restoring moment, but not so large that longitudinal stability becomes excessively strong.
- A forward CG increases static stability.
- The difference between the aft CG limit and the neutral point is the static margin.
- The CG position has a strong influence on longitudinal static stability, because its position determines the length of the arm between it and the AC.

The correct answers are: The manufacturer's forward CG limit ensures an arm that is long enough to produce a sufficiently strong restoring moment, but not so large that longitudinal stability becomes excessively strong., The CG position has a strong influence on longitudinal static stability, because its position determines the length of the arm between it and the AC., The difference between the aft CG limit and the neutral point is the static margin., A forward CG increases static stability.

Question 26

Not answered

Marked out of 1.00

Under normal conditions, in straight, level and unaccelerated flight, the horizontal stabiliser produces _____ pitching moment.

- no.
- a tail-down.
- a tail-up.

The correct answer is: a tail-down.

Question 27

Not answered

Marked out of 1.00

Aeroplane manoeuvrability increases for a given control surface deflection when:

- IAS increases.
- the CG moves forward.
- IAS decreases.
- flaps are retracted at constant IAS.

The correct answer is: IAS increases.

Question 28

Not answered

Marked out of 1.00

The essential pre-requisite for dynamic stability is _____ _____.

- static stability
- speed stability

The correct answer is: static stability

Question 29

Not answered

Marked out of 1.00

An aircraft has positive static _____ stability if, after a displacement in roll, its initial tendency is to return to wings level.

- perpendicular
- directional
- lateral

The correct answer is: lateral

Question 30

Not answered

Marked out of 1.00

The initial response (or initial tendency) of an object, once the force that displaced it from equilibrium has been removed, determines the aircraft's _____ stability.
The subsequent response of an object over a period of time, after it has been displaced from equilibrium by a disturbing force and after the disturbing force has been removed, determines the aircraft's _____ stability.

- dynamic; dynamic.
- dynamic; static.
- static; dynamic.
- static; static.

The correct answer is: static; dynamic.

Question 31

Not answered

Marked out of 1.00

_____ angle is the angle at which an aircraft is inclined about its longitudinal axis with respect to the horizontal.

- Sideslip
- Bank
- Yaw

The correct answer is: Bank

Question 32

Not answered

Marked out of 1.00

Longitudinal static stability is created by the fact that the:

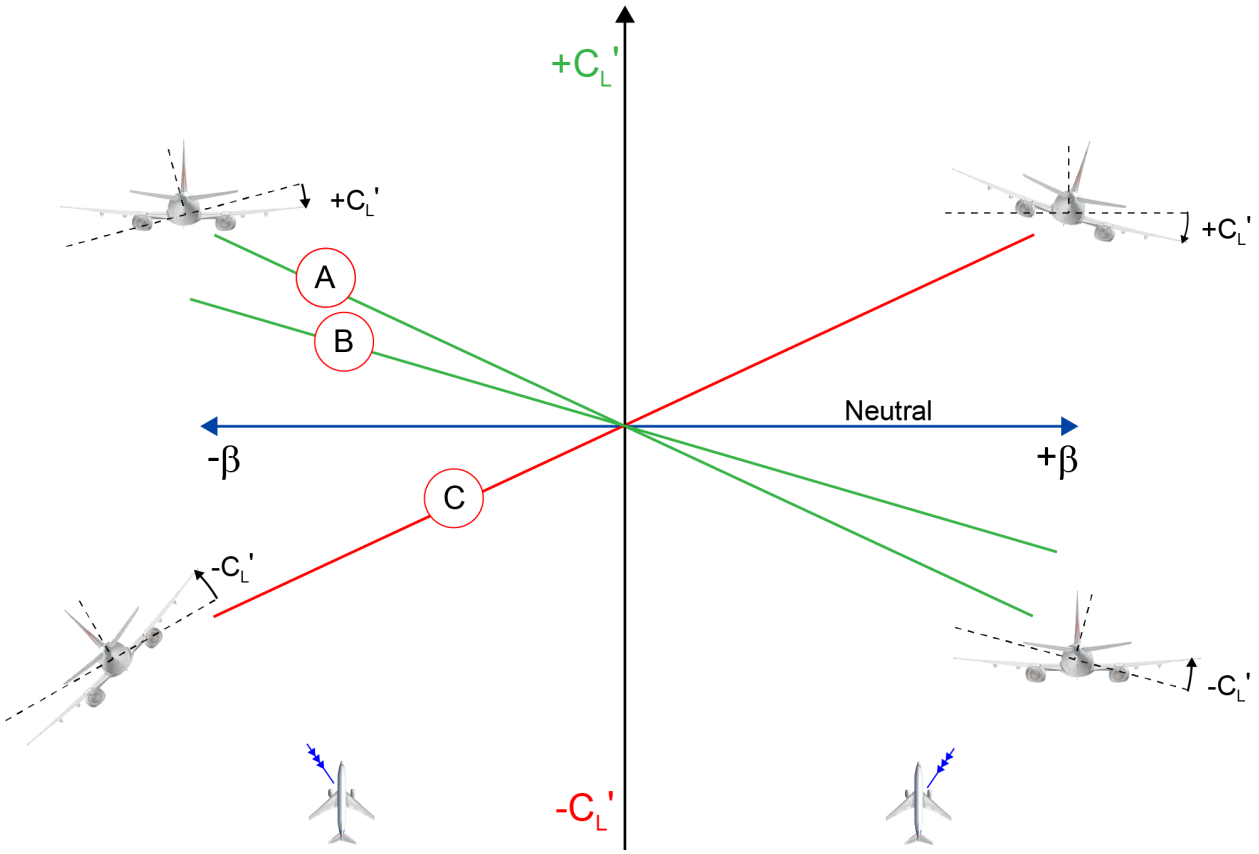
- centre of gravity is located in front of the neutral point of the aeroplane.
- aeroplane possesses a large trim speed range.
- wing surface is greater than the horizontal tail surface.
- centre of gravity is located in front of the leading edge of the wing.

The correct answer is: centre of gravity is located in front of the neutral point of the aeroplane.

Question 33

Not answered

Marked out of 1.00



Study the diagram. Identify which of the following statements about lateral stability are correct: Mark all correct answers.

- Curve B indicates stability.
- Curve C indicates instability.
- A horizontal curve indicates neutral stability.
- Curve A indicates stronger stability than Curve B.
- Curve B could indicate the effect of altitude when compared with Curve A.

The correct answers are: Curve C indicates instability., Curve B indicates stability., Curve B could indicate the effect of altitude when compared with Curve A., A horizontal curve indicates neutral stability., Curve A indicates stronger stability than Curve B.

Question 34

Not answered

Marked out of 1.00

An object with _____ static stability shows no tendency to move back to, or further diverge from, equilibrium after being displaced.

- neutral.
- positive.
- negative.

The correct answer is: neutral.

Question 35

Not answered

Marked out of 1.00

An uncoordinated displacement in roll results in _____.

- pitch down moments.
- sideslip.

The correct answer is: sideslip.