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Duration	9 secs
Marks	0.00/45.00
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

Before flight, if any ice contamination is present on the critical surfaces, you must _____ the aircraft. If icing conditions are present you must also _____ the aircraft.

- ☐ de-ice; anti-ice.
- ☐ anti-ice; de-ice.
- ☐ anti-ice; anti-ice.
- ☐ de-ice; de-ice.

The correct answer is: de-ice; anti-ice.

Question 2

Not answered

Marked out of 1.00

The point at which the first flow reaches M 1.0 is called the _____ .

- ☐ critical Mach number
- ☐ drag divergence Mach number

The correct answer is: critical Mach number

Question 3

Not answered

Marked out of 1.00

At high speeds, _____ may be used for lateral control rather than the inboard ailerons. Without such systems, VNE or VMO/MMO must always be set lower than the aileron reversal speed.

- ☐ spoilers
- ☐ differential speed-brake

The correct answer is: spoilers

Question 4

Not answered

Marked out of 1.00

If icing reduces the alpha CRIT, the aircraft may stall _____ stall warnings are triggered.

- ☐ after
- ☐ before

The correct answer is: before

Question 5

Not answered

Marked out of 1.00

_____ is the absolute maximum EAS that the airframe can withstand without damage or structural failure.

- ☐ VD
- ☐ VA
- ☐ VC
- ☐ VB

The correct answer is: VD

Question 6

Not answered

Marked out of 1.00

VLO is often _____ than VLE.

- ☐ lower
- ☐ greater
- ☐ higher

The correct answer is: lower

Question 7

Not answered

Marked out of 1.00

Determine the approximate value of lift for an aircraft climbing at an angle of 9° with a weight of 1 250 000 N, drag of 300 000 N and a thrust of 600 000 N:

- ☐ 600 000 N
- ☐ 400 000 N
- ☐ 1 600 000 N
- ☐ 1 200 000 N

The correct answer is: 1 200 000 N

Question 8

Not answered

Marked out of 1.00

A twin-engine propeller aircraft suffers an engine failure. Under which of the following circumstances is retention of control likely to be most difficult?

- ☐ Aerodrome at high density altitude, critical engine failure at the point of go-around.
- ☐ Aerodrome at high density altitude, critical engine failure after take-off.
- ☐ Aerodrome at low density altitude, critical engine failure after take-off.
- ☐ Aerodrome at low density altitude, critical engine failure at the point of go-around.

The correct answer is: Aerodrome at low density altitude, critical engine failure at the point of go-around.

Question 9

Not answered

Marked out of 1.00

You should not intentionally fly close to VNE/VMO:

- ☐ Because this increases the risk of inadvertently exceeding the limit in a slight descent or turbulence.
- ☐ Because of the risk of a high speed stall.
- ☐ Because VNE/VMO changes with decreasing aircraft mass.
- ☐ Because this speed is very close to coffin corner.

The correct answer is: Because this increases the risk of inadvertently exceeding the limit in a slight descent or turbulence.

Question 10

Not answered

Marked out of 1.00

The aircraft yaws to the left. This might occur because:

- ☐ There is an increased lift from the right wing.
- ☐ You roll to the left.
- ☐ You press the right pedal.
- ☐ You roll to the right.

The correct answer is: You roll to the right.

Question 11

Not answered

Marked out of 1.00

A tailplane stall triggered by ice contamination causes the aircraft to pitch nose-down. Downwash from the wing _____ the risk of tailplane stall. This is why _____ flap is often the trigger for the stall of an ice-contaminated tailplane.

- ☐ decreases; raising.
- ☐ increases; raising.
- ☐ increases; lowering.
- ☐ decreases; lowering.

The correct answer is: increases; lowering.

Question 12

Not answered

Marked out of 1.00

Aeroplanes designed for transonic or supersonic flight should have a trimmable horizontal stabiliser because:

- ☐ The elevator may become ineffective if a shock wave forms ahead of the hinge, causing the airflow to separate.
- ☐ The ailerons may need to be locked-out if shock waves form ahead of their hinges.
- ☐ Shock waves on a control surface may cause high frequency oscillation known as 'control buzz'.
- ☐ Only a THS allows the crew to detect the onset of Mach buffet.

The correct answer is: The elevator may become ineffective if a shock wave forms ahead of the hinge, causing the airflow to separate.

Question 13

Not answered

Marked out of 1.00

Which 3 of the following statements is/are correct:

- ☐ A fixed pitch propeller preserves propeller efficiency over a wide range of airspeeds.
- ☐ The adjustable pitch propeller allows the blade pitch angle to be manually adjusted by the pilot using a pitch control lever.
- ☐ On a fixed pitch propeller, there is only one TAS at which the blade angle of attack is optimum.
- ☐ The blade pitch angle of a constant speed propeller is mechanically controlled by a governor to keep the propeller blades at their optimum angle of attack over a wide airspeed range.
- ☐ On a constant speed propeller, the blade angle of attack is preserved at its optimum (across a wide range of TAS) by altering the blade twist.

The correct answers are: The adjustable pitch propeller allows the blade pitch angle to be manually adjusted by the pilot using a pitch control lever., The blade pitch angle of a constant speed propeller is mechanically controlled by a governor to keep the propeller blades at their optimum angle of attack over a wide airspeed range., On a fixed pitch propeller, there is only one TAS at which the blade angle of attack is optimum.

Question 14

Not answered

Marked out of 1.00

An engine failure can result in a windmilling (1) propeller and a feathered (2) propeller. Which statement about propeller drag is correct?

- ☐ (1) is larger than (2).
- ☐ (1) is equal to (2).
- ☐ it is impossible to say which one is largest.
- ☐ (2) is larger than (1).

The correct answer is: (1) is larger than (2).

Question 15

Not answered

Marked out of 1.00

A VMCA is needed because:

- ☐ There is a minimum speed below which the moment produced by asymmetric thrust becomes very large.
- ☐ There is a minimum speed below which the rudder and fin can't provide enough restoring moment.
- ☐ There is a maximum speed above which the rudder and fin can't provide enough restoring moment.
- ☐ There is a minimum speed below which the rudder stalls.

The correct answer is: There is a minimum speed below which the rudder and fin can't provide enough restoring moment.

Question 16

Not answered

Marked out of 1.00

Located on the underside of a wing's leading edge, vortilons produce a vortex on the wing's :

- ☐ upper surface, at high angles of attack, to reduce the spanwise flow of air.
- ☐ upper surface, at cruise angles of attack, to keep the boundary layer attached to the wing.
- ☐ lower surface, at high angles of attack, to keep the boundary layer attached to the wing.
- ☐ lower surface, at low angles of attack, to provide improved roll control.

The correct answer is: upper surface, at high angles of attack, to reduce the spanwise flow of air.

Question 17

Not answered

Marked out of 1.00

If an aeroplane exhibits insufficient stick force per g, this problem can be resolved by installing:

- ☐ a bobweight in the control system which pulls the stick forwards.
- ☐ a spring which pushes the stick forwards.
- ☐ a spring which pulls the stick backwards.
- ☐ a bobweight in the control system which pulls the stick backwards.

The correct answer is: a bobweight in the control system which pulls the stick forwards.

Question 18

Not answered

Marked out of 1.00

_____ wings:

Significantly increase the margin between MCRIT and MDRAG DIVERGENCE.

Can be made much stronger than any other type of wing.

Have good lift characteristics right up to the critical angle because of their round leading edges.

- ☐ Supercritical
- ☐ Thin
- ☐ Swept

The correct answer is: Supercritical

Question 19

Not answered

Marked out of 1.00

_____ power setting at _____ air density produces the greatest yawing moment.

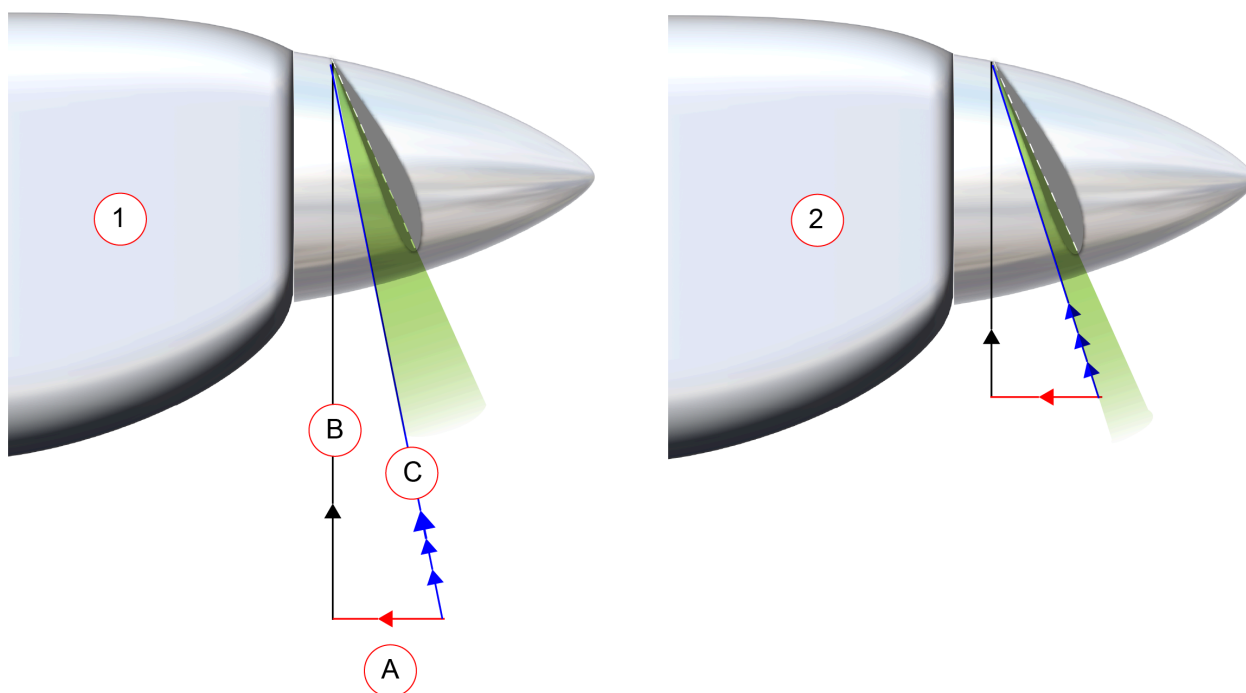
- ☐ High; low.
- ☐ Low; high.
- ☐ Low; low.
- ☐ High; high.

The correct answer is: High; high.

Question 20

Not answered

Marked out of 1.00



Study the diagram then identify which 3 of the following statements are correct.

- ☐ Label B shows rotational velocity.
- ☐ Label C shows the RAF.
- ☐ Label A shows IAS.
- ☐ Label 1 shows a high air speed situation.
- ☐ Label 2 shows a low RPM situation.

The correct answers are: Label 2 shows a low RPM situation., Label B shows rotational velocity., Label C shows the RAF.

Question 21

Not answered

Marked out of 1.00

The purpose of the _____ wing is to retain a high MCRIT despite having a thicker section, which increases the margin between MCRIT and MDRAG DIVERGENCE.

- ☐ symmetrical
- ☐ supercritical
- ☐ critical

The correct answer is: supercritical

Question 22

Not answered

Marked out of 1.00

_____ is the highest speed at which sudden, full-up elevator deflection can be made without exceeding the limit load factor.

- ☐ VC
- ☐ VA
- ☐ VD
- ☐ VB

The correct answer is: VA

Question 23

Not answered

Marked out of 1.00

_____ drag from heavy rain can further increase drag.

- ☐ Momentum
- ☐ Viscous

The correct answer is: Momentum

Question 24

Not answered

Marked out of 1.00

The buffet margin reduces if: Mark all correct answers.

- ☐ Load factor increases.
- ☐ Mass reduces.
- ☐ Pressure altitude increases.
- ☐ Angle of bank increases.
- ☐ *CG moves fwd.
- ☐ Alpha increases.

The correct answers are: Alpha increases., Pressure altitude increases., Load factor increases., Angle of bank increases., *CG moves fwd.

Question 25

Not answered

Marked out of 1.00

A thin covering of frost on the aircraft's critical surfaces _____ aerodynamic performance.

- ☐ has only a minor effect on
- ☐ can improve
- ☐ can catastrophically degrade
- ☐ has no effect on

The correct answer is: can catastrophically degrade

Question 26

Not answered

Marked out of 1.00

You are flying a crop duster in the utility category with a VSO of 45 kts and a VS1 of 58 kts. What is the VA speed?

- ☐ 66 kt
- ☐ 94 kt
- ☐ 113 kt
- ☐ 122 kt

The correct answer is: 122 kt

Question 27

Not answered

Marked out of 1.00

The critical Mach number of an aeroplane is the Mach number:

- ☐ above which, locally, supersonic flow exists somewhere over the aeroplane.
- ☐ at which the aeroplane has zero buffet margin.
- ☐ at which there is supersonic flow over a part of the aeroplane.
- ☐ at which there is subsonic flow over all parts of the aeroplane.

The correct answer is: above which, locally, supersonic flow exists somewhere over the aeroplane.

Question 28

Not answered

Marked out of 1.00

On a right-hand propeller, P-factor will cause the aircraft to:

- ☐ Roll right.
- ☐ Yaw left.
- ☐ Roll left.
- ☐ Yaw right.

The correct answer is: Yaw left.

Question 29

Not answered

Marked out of 1.00

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

- ☐ The propeller diameter must be restricted to ensure that tip velocity doesn't become transonic or supersonic.
- ☐ Increasing the number of blades increases solidity but the maximum number of blades is limited by the need to preserve the aerodynamic performance of individual blades.
- ☐ Compressibility effects at high tip speeds reduce the efficiency of the propeller.
- ☐ The principal cause of high propeller noise is high propeller tip speeds.
- ☐ The propeller diameter must be restricted to ensure adequate ground clearance.

The correct answers are: The propeller diameter must be restricted to ensure that tip velocity doesn't become transonic or supersonic., The propeller diameter must be restricted to ensure adequate ground clearance., Increasing the number of blades increases solidity but the maximum number of blades is limited by the need to preserve the aerodynamic performance of individual blades., The principal cause of high propeller noise is high propeller tip speeds., Compressibility effects at high tip speeds reduce the efficiency of the propeller.

Question 30

Not answered

Marked out of 1.00

On the ground, when parked overnight in cold conditions with visible moisture present, ice can accumulate _____.

- ☐ on the leading edges and upper surfaces.
- ☐ anywhere on the airframe.

The correct answer is: anywhere on the airframe.

Question 31

Not answered

Marked out of 1.00

These parameters are used for calculating _____:

Go-around power or thrust on the operating engine(s).

The most unfavourable CG position (aft CG - shortest arm).

The aircraft trimmed for the approach.

The most unfavourable weight.

In the most critical configuration for the approach and landing.

- ☐ VMCA
- ☐ VMCL

The correct answer is: VMCL

Question 32

Not answered

Marked out of 1.00

An aircraft has a right-hand propeller. The pilot pitches nose-down. Gyroscopic effects will cause the aircraft to:

- ☐ Pitch down.
- ☐ Yaw right.
- ☐ Pitch up.
- ☐ Yaw left.

The correct answer is: Yaw left.

Question 33

Not answered

Marked out of 1.00

Which statement about propeller icing is correct?

- I. Propeller icing increases blade element drag and reduces blade element lift.
- II. Propeller icing reduces propeller efficiency.

- ☐ I is incorrect, II is incorrect.
- ☐ I is incorrect, II is correct.
- ☐ I is correct, II is incorrect.
- ☐ I is correct, II is correct.

The correct answer is: I is correct, II is correct.

Question 34

Not answered

Marked out of 1.00

Which of the following statements about tailplanes is correct? A T-tail is:

- ☐ less stabilising than a low tailplane because it is more affected by downwash behind the wings.
- ☐ less stabilising than a low tailplane because it is less affected by downwash behind the wings.
- ☐ more stabilising than a low tailplane because it is less affected by downwash behind the wings.
- ☐ more stabilising than a low tailplane because it is more affected by downwash behind the wings.

The correct answer is: more stabilising than a low tailplane because it is less affected by downwash behind the wings.

Question 35

Not answered

Marked out of 1.00

VRA is turbulence penetration speed. It must be less than VMO - _____ kt.

- ☐ 50
- ☐ 15
- ☐ 25
- ☐ 35

The correct answer is: 35

Question 36

Not answered

Marked out of 1.00

If the elevator trim tab is deflected up, the cockpit trim indicator shows:

- ☐ nose up.
- ☐ neutral.
- ☐ nose down.
- ☐ nose left.

The correct answer is: nose down.

Question 37

Not answered

Marked out of 1.00

The advantage of cruising above _____ is that the aircraft can:
Achieve a faster cruise speed for not much increase in drag.
Attain better specific range.
Achieve the optimum cruise altitude.

- ☐ MDrag Divergence
- ☐ MFS
- ☐ MCRIT

The correct answer is: MCRIT

Question 38

Not answered

Marked out of 1.00

Regarding a normal shock wave on the upper surface of a wing, as Mach number increases towards Mach drag divergence:

- ☐ the coefficient of drag increases and the coefficient of lift decreases.
- ☐ the shock wave intensifies and the reduction in air density from in front of the shock wave to behind it increases.
- ☐ the reduction in the local speed of sound from in front of the shock wave to behind it increases.
- ☐ the shock wave moves aft and the coefficient of lift increases.

The correct answer is: the shock wave moves aft and the coefficient of lift increases.

Question 39

Not answered

Marked out of 1.00

On a wing flying in supersonic flow, the normal shock wave forms at an angle of:

- ☐ more than 90° to the wing surface.
- ☐ less than 70° to the wing surface.
- ☐ less than 70° to the wing surface, that further reduces towards the edge of the shockwave.
- ☐ 90° to the wing surface.

The correct answer is: 90° to the wing surface.

Question 40

Not answered

Marked out of 1.00

Because the load factor increases when manoeuvring and in turbulence, a load factor of _____ g is normally used to determine the buffet onset Mach numbers when using a BOB chart.

- ☐ 1.1
- ☐ 1.3
- ☐ 1
- ☐ 0.9

The correct answer is: 1.3

Question 41

Not answered

Marked out of 1.00

The phenomenon whereby the aircraft tries to rotate in the opposite direction from the propeller is called '_____'. This can produce a _____ when on the ground during the take-off run. On light twin aircraft this effect can be reduced by using counter-rotating propellers.

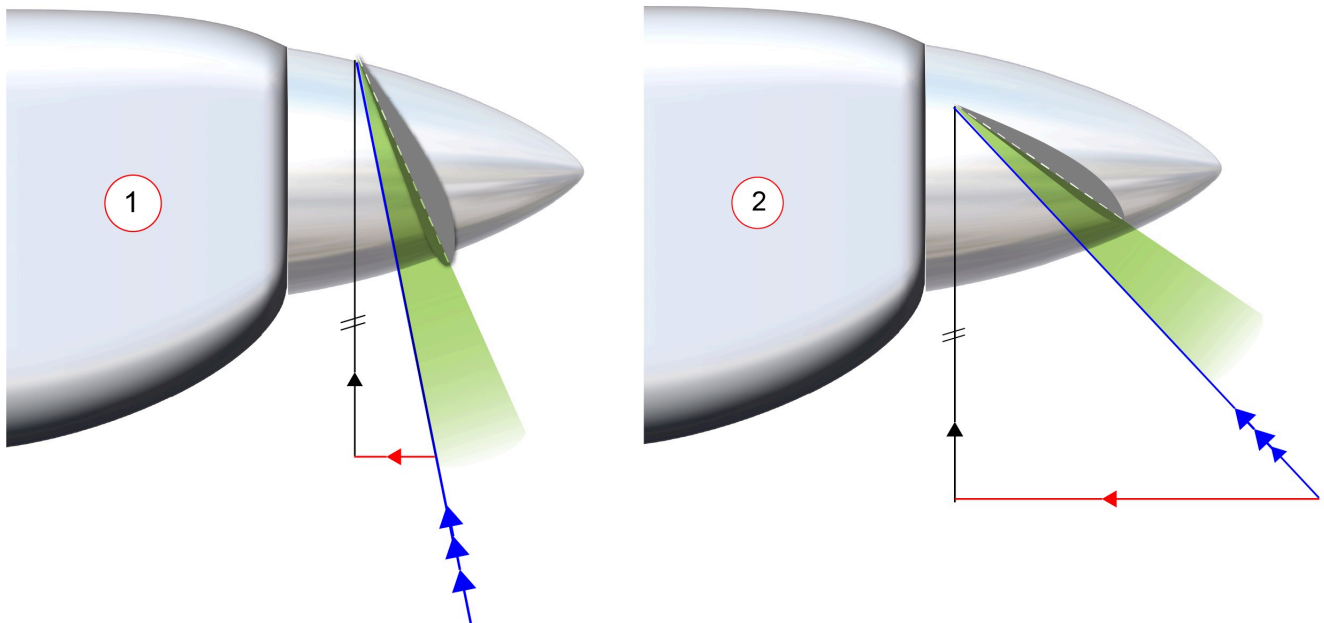
- ☐ p factor; yaw
- ☐ torque effect; yaw
- ☐ torque effect; roll
- ☐ p factor; roll

The correct answer is: torque effect; yaw

Question 42

Not answered

Marked out of 1.00



Study the diagram, then identify which of the following statements are correct. Mark all correct answers.

- ☐ Aircraft 1 has a lower air speed than Aircraft 2.
- ☐ The rotational velocity of Propeller 2 has been increased to preserve optimum alpha.
- ☐ Propeller 2 is creating more torque drag than Propeller 1.
- ☐ The images show the operation of a variable pitch propeller.
- ☐ Propeller 2 is creating the same torque drag as Propeller 1

The correct answers are: Aircraft 1 has a lower air speed than Aircraft 2., The images show the operation of a variable pitch propeller., Propeller 2 is creating more torque drag than Propeller 1.

Question 43

Not answered

Marked out of 1.00

The narrow range of available operating speeds, bounded by the onset of low speed buffet at one side and the onset of high speed buffet at the other is known as the buffet margin. It _____ with altitude.

- ☐ decreases
- ☐ increases
- ☐ remains constant

The correct answer is: decreases

Question 44

Not answered

Marked out of 1.00

The maximum time an aircraft can remain on the ground before take-off after de-icing/anti-icing is known as the _____ time. If precipitation is falling, this will _____ the time.

- ☐ standing; reduce.
- ☐ standing; increase.
- ☐ holdover; increase.
- ☐ holdover; reduce.

The correct answer is: holdover; reduce.

Question 45

Not answered

Marked out of 1.00

If, after anti-icing/de-icing you exceed the holdover time while waiting for take off, you _____.

- ☐ may continue the take-off provided you see no sign of contamination.
- ☐ You should make note of this in the aircraft technical log, and then continue the take-off provided you see no sign of contamination.
- ☐ must repeat the entire anti-ice/de-ice procedure.
- ☐ must have the surfaces visually inspected by an engineer.

The correct answer is: must repeat the entire anti-ice/de-ice procedure.