

Unit 14 - Week 12

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Assignment 12

The due date for submitting this assignment has passed.
As per our records you have not submitted this assignment.

Due on 2020-12-09, 23:59 IST.

1) Which of the following statements is/are TRUE with respect to a V-n Diagram? 1 point

- It is applicable only for symmetrical maneuvers in the vertical plane
- The vertical load factor n_z is directly proportional to the square of the velocity
- The same V-n diagram is applicable for all altitudes
-

The separate V-n diagrams are drawn for n_x , n_z & n_y

No, the answer is incorrect.

Score: 0

Accepted Answers:

It is applicable only for symmetrical maneuvers in the vertical plane
The vertical load factor n_z is directly proportional to the square of the velocity
The same V-n diagram is applicable for all altitudes

2) Which speed is used on the x-axis of a V-n diagram? 1 point

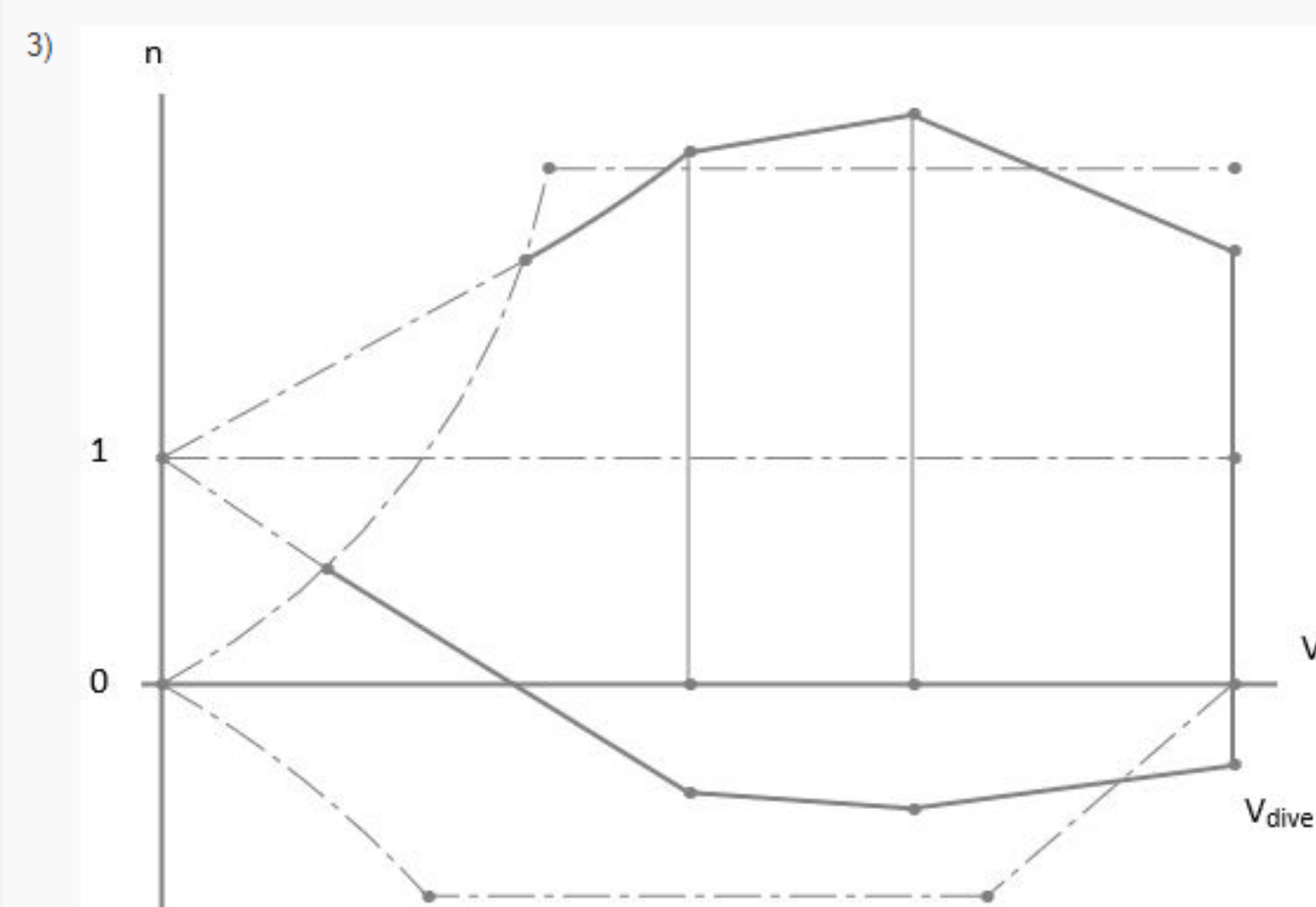
- True Airspeed
- Indicated Airspeed
- Equivalent Airspeed
- Ground Speed

No, the answer is incorrect.

Score: 0

Accepted Answers:

Equivalent Airspeed



The boundary formed by the dark lines in following diagram represent _____

- The Flight Envelope of an aircraft
- The Drag Polar of an aircraft
- Limits imposed on V-n Diagram due to Maneuver loads
- Limits imposed on V-n Diagram due to Gust loads

No, the answer is incorrect.

Score: 0

Accepted Answers:

Limits imposed on V-n Diagram due to Gust loads

4) Most vertical gusts are never sharp or abrupt in nature, but gradual. This fact is taken care in FAR 23 regulations by : 1 point

-
- A lower value of max. V_g
-
- Assuming a Sine distribution for V_g
- Including a Gust Alleviation Factor 'k'
-
- Assuming a Cosine distribution for V_g

No, the answer is incorrect.

Score: 0

Accepted Answers:

Including a Gust Alleviation Factor 'k'

Assuming a Cosine distribution for V_g 5) Fastest turn rate and smallest turn radius is achieved when the aircraft flies at 1 point

- Design Diving Speed
- Cruise Speed
- Corner Speed
- Stall Speed

No, the answer is incorrect.

Score: 0

Accepted Answers:

Corner Speed

6) Gust load factor depends upon: 1 point

- Wing loading
- Free stream velocity
- Stalling Speed
- Weight of the aircraft

No, the answer is incorrect.

Score: 0

Accepted Answers:

Wing loading

Free stream velocity

Weight of the aircraft

7) The relevant data of an aircraft is given below:

Weight of the aircraft, $W = 250,000$ NWing planform area, $S = 250$ m^2

Positive limit load factor = 5.0

Flying at an altitude where density = 0.4444 kg/m^3 Maximum lift coefficient, $C_{L,Max} = 1.0$

Calculate the corner speed of the aircraft in (m/s)

Hint

No, the answer is incorrect.

Score: 0

Accepted Answers:

(Type: Range) 85,155

8) Which is/are the main motivation to morph an aircraft? 1 point

- Improve aircraft performance
- Increase vibration or control flutter
- Reduced Drag
- Increase Weight

No, the answer is incorrect.

Score: 0

Accepted Answers:

Improve aircraft performance

Reduced Drag

9) The increment in the load factor due to gust is, 1 point

- Directly proportional to the Gust Velocity and inversely proportional to the Wing Loading
- Directly proportional to the Gust Velocity and Wing Loading
- Inversely proportional to the Gust Velocity and Wing Loading
- Directly proportional to the Wing Loading and Directly proportional to the Wing Loading

No, the answer is incorrect.

Score: 0

Accepted Answers:

Directly proportional to the Gust Velocity and inversely proportional to the Wing Loading

10) What is the type of load that leads to Hammershock in an aircraft? 1 point

- Airloads
- Inertia
- Powerplant
- Control surface deflection

No, the answer is incorrect.

Score: 0

Accepted Answers:

Powerplant

11) An Airborne Early Warning and Control System (AEW&CS) is used for 1 point

- Controlling and coordinating air operations in an area
- Early identification of a friend (or) a foe
- Jamming and hindering enemy radar and communication systems
- Detection of enemy aircraft and ships at a long range

No, the answer is incorrect.

Score: 0

Accepted Answers:

Controlling and coordinating air operations in an area

Early identification of a friend (or) a foe

Detection of enemy aircraft and ships at a long range

12) The ability of the aircraft weapon system to accomplish assigned tasks in a given mission depends upon 1 point

- aircraft performance and handling capabilities
- the target acquisition capability
- effectiveness and number of weapons carried
- terrain and weather conditions

No, the answer is incorrect.

Score: 0

Accepted Answers:

aircraft performance and handling capabilities

the target acquisition capability

effectiveness and number of weapons carried

terrain and weather conditions