Unit 1 - How to access the portal

Assignment 0

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

Due on 2018-07-29, 23:59 IST.

1) For a cambered airfoil, $C_{m0_{a,c,w}}$ is

- always positive
- always negative
- zero
- can't say

No, the answer is incorrect.
Score: 0
Accepted Answers:
always negative

2) For static stability minimum condition that must be satisfied is

- $C_{ma} < 0$
- $C_{ma} < 0, C_{ma} > 0$
- $C_{ma} > 0, C_{ma} > 0$
- $C_{ma} < 0, C_{ma} < 0$

No, the answer is incorrect.
Score: 0
Accepted Answers:

3) Data for question 3-6

For an aircraft, the roots of the longitudinal characteristic equation are as shown in the following figure

No, the answer is incorrect.
Score: 0
Accepted Answers:
Natural frequency for the short period mode is close to

- 4.2 rad/sec
- 3.6 rad/sec
- 4.6 rad/sec
- 5.2 rad/sec

No, the answer is incorrect.
Score: 0
Accepted Answers:
3.6 rad/sec

Damping ratio for Short Period mode is close to

- 0.33
- 0.44
- 0.55
- 0.66

No, the answer is incorrect.
Score: 0
Accepted Answers:
0.55

Natural frequency for the Phugoid mode is close to

- 0.206 rad/sec
- 0.306 rad/sec
- 0.106 rad/sec
- 0.006 rad/sec

No, the answer is incorrect.
Score: 0
Accepted Answers:
0.206 rad/sec

Damping ratio for Phugoid mode is close to

- 1.062
- 4.113
- 0.024
- 3.214

No, the answer is incorrect.
Score: 0
7) Data for Question 7-8
For an aircraft having $X_{CG} = 0.3$, $C_m$ Vs $C_l$ plot is shown in the figure.

Cm0 for this aircraft will be close to

- 0.05
- -0.05
- 0.1
- -0.1

No, the answer is incorrect.
Score: 0
Accepted Answers:
0.05

8) The static margin for this aircraft is

- 10 %
- -10 %
- 1 %
- -1 %

No, the answer is incorrect.
Score: 0
Accepted Answers:
10 %

9) Data for Question 9-10
The characteristics equation for the longitudinal matrix is given as

$$600s^4 + 1400s^3 + 5500s^2 + 90s + 45 = 0$$

The damping coefficients for the roots are

- 3.021 & 0.384
- 0.091 & 0.080
- 0.384 & 0.080
- 3.021 & 0.091
10) The natural frequencies (rad/sec) for the roots are

- 3.021 & 0.091
- 0.384 & 0.080
- 3.021 & 0.080
- 0.384 & 0.091

No, the answer is incorrect.
Score: 0
Accepted Answers:
3.021 & 0.091