Assignment 12

The due date for submitting this assignment has passed. Due on 2019-10-23, 23:59 IST.
As per our records you have not submitted this assignment.

1) For reflex airfoil, $C_{m0_{ref}}$ is

- positive
- negative
- zero
- can't say

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

2) The aerodynamic forces acting on the aircraft depends on

- Relative Ground Speed
- Wind Speed
- Relative Airspeed
- None of above

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

3) The gravitational force components along the x, y and z axes respectively can be written as

- $-mg\sin\theta, mg\cos\theta\sin\phi$ and $mg\cos\theta\cos\phi$
- $mg\cos\theta, mg\cos\theta\sin\phi$ and $mg\cos\theta\cos\phi$
- $-mg\sin\theta, mg\cos\theta\sin\phi$ and $mg\cos\theta\cos\phi$

https://onlinecourses.nptel.ac.in/noc19_ae10/unit?unit=94&assessment=142
DATA FOR QUES 4-8

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

The roots for short period mode are
-2.5 ± 0.2 i
-2.5 ± 3.0 i
-0.004 ± 0.2 i
-0.004 ± 3.0 i

No, the answer is incorrect. Score: 0
Accepted Answers:
-2.5 ± 3.0 i

The roots of Phugoid mode are
-2.5 ± 0.2 i
-2.5 ± 3.0 i
-0.004 ± 0.2 i
-0.004 ± 3.0 i

No, the answer is incorrect. Score: 0
Accepted Answers:
-0.004 ± 0.2 i

6) Calculate the natural frequency (rad/sec) and damping ratio for the short period mode

3.9 & 0.64
3.6 & 0.55
2.6 & 0.35
4.6 & 0.35

No, the answer is incorrect. Score: 0
7) Calculate the natural frequency and damping ratio for the phugoid mode.

- 0.40 \& 0.25
- 0.04 \& 0.025
- 0.20 \& 0.020
- 0.02 \& 0.25

No, the answer is incorrect.
Score: 0
Accepted Answers:
0.20 \& 0.020

8) Assuming two-degree approximation for the phugoid mode. Estimate the flight speed for which the roots are given

- 59.55 m/s
- 69.36 m/s
- 40.33 m/s
- 45.33 m/s

No, the answer is incorrect.
Score: 0
Accepted Answers:
69.36 m/s