Assignment 11

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

Due on 2018-10-17, 23:59 IST.

1) The Long period motion is given as:
\[
\begin{bmatrix}
\Delta \dot{u} \\
\Delta \dot{\theta}
\end{bmatrix} = \begin{bmatrix}
-0.03 & -9.81 \\
0.055 & 0.0
\end{bmatrix} \begin{bmatrix}
\Delta u \\
\Delta \theta
\end{bmatrix}
\]

The damping ratio and undamped natural frequency(rad/s) are

- 0.0204, 0.5395
- 0.0204, 0.7345
- 0.0102, 0.7345
- 0.0204, 0.5395

No, the answer is incorrect.
Score: 0
Accepted Answers:
0.0204, 0.7345

2) The Long period motion is given as:
\[
\begin{bmatrix}
\Delta \dot{u} \\
\Delta \dot{\theta}
\end{bmatrix} = \begin{bmatrix}
-0.03 & -9.81 \\
0.055 & 0.0
\end{bmatrix} \begin{bmatrix}
\Delta u \\
\Delta \theta
\end{bmatrix}
\]

The period of sinusoidal motion in seconds will be

- 4.27
- 27.1
- 8.55
- 16.0

No, the answer is incorrect.
Score: 0
Accepted Answers:
8.55

3) When the centre of gravity of the aircraft moves rearward then the effect on long period...
If horizontal tail area remains fixed, then only more stable as compared to last centre gravity position.

No, the answer is incorrect.
Score: 0
Accepted Answers:
Less stable as compared to last centre of gravity position.

4) The Short period motion is given as:
\[
\begin{bmatrix}
\Delta w \\
\Delta q
\end{bmatrix} = \begin{bmatrix}
-1 & 1 \\
a & b
\end{bmatrix}
\begin{bmatrix}
\Delta w \\
\Delta q
\end{bmatrix}
\]

The numeric value of a, b will be: (Take damping ratio and undamped natural frequency are 0 and 5 rad/s respectively.

-26, 1
-25, 1
-25, 0
-06, 0

No, the answer is incorrect.
Score: 0
Accepted Answers:
-26, 1

5) The Short period motion is given as:
\[
\begin{bmatrix}
\Delta w \\
\Delta q
\end{bmatrix} = \begin{bmatrix}
-0.06 & 1 \\
-4.3 & -3
\end{bmatrix}
\begin{bmatrix}
\Delta w \\
\Delta q
\end{bmatrix}
\]

The number cycles to half the amplitude will be
0
5
2
3

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