

X


<https://swayam.gov.in>

https://swayam.gov.in/nc_details/NPTEL

reviewer4@nptel.iitm.ac.in ▾

NPTEL (<https://swayam.gov.in/explorer?ncCode=NPTEL>) » **Design of fixed wing Unmanned Aerial Vehicles**
(course)

Announcements (announcements) **About the Course** (https://swayam.gov.in/nd1_noc19_ae06/preview)

Ask a Question (forum) Progress (student/home) Mentor (student/mentor)

Unit 9 - Week 8

Course outline

How to access the portal

Week 1

Week 2

Week 3

Week 4

Week 5

Week 6

Week 7

Week 8

- Lecture 21 - Contribution of tail in static stability and Neutral point. (unit? unit=46&lesson=47)
- Lecture 22 - Tutorial 2 (unit? unit=46&lesson=48)

Assignment 08

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) A pilot of passenger aircraft, during it's final phase of approach for landing, realised **2 points** malfunction in the elevator actuator. In the current scenario he can deflect elevator only 5% of the required deflection. Now assume you be the pilot, what should be your appropriate instruction to passengers, to increase chances of safe landing?

- Pray to God
- Prepare for crash landing
- Move towards the cockpit
- Gather at the aft part of the airplane

No, the answer is incorrect.

Score: 0

Accepted Answers:

Move towards the cockpit

2) In an UAV if the tail volume ratio increase from 0.3 to 0.6. Due to this change the longitudinal **1 point** stability of UAV will?

- Increases
- Decreases
- Remain same
- Cannot say

No, the answer is incorrect.

Score: 0

Accepted Answers:

Increases

● Lecture 23 -
Tutorial 3 (unit?
unit=46&lesson=49)

○ Quiz :
Assignment 08
(assessment?
name=80)

● Assignments for
Practice (unit?
unit=46&lesson=81)

○ Feedback For
Week 8 (unit?
unit=46&lesson=83)

○ Assignment 08
Solution (unit?
unit=46&lesson=84)

Text
Transcription

3) Which one is correct about neutral point of UAV? **1 point**

- Neutral point does not depend upon the location of centre of gravity
- Neutral point depends upon the location of centre of gravity
- Neutral point depend upon the location of centre of pressure
- None of these

No, the answer is incorrect.

Score: 0

Accepted Answers:

Neutral point does not depend upon the location of centre of gravity

4) During a flight if the elevator is deflected with a certain -ve angle, how this will affect the longitudinal stability of aircraft? **1 point**

- Increases
- Decreases
- Unchanged
- Cannot say

No, the answer is incorrect.

Score: 0

Accepted Answers:

Unchanged

5) In an aircraft without changing any other dimensions the tail setting angle is decrease by 6 degrees. Due to this change the longitudinal stability of aircraft will? **1 point**

- Increases
- Decreases
- Remain same
- Cannot say

No, the answer is incorrect.

Score: 0

Accepted Answers:

Remain same

6) Which condition holds to trim the Stable UAV at zero angle of attack? **1 point**

-
- $C_{m_\alpha} \geq 0, C_{m_0} = 0$
-
- $C_{m_\alpha} \leq 0, C_{m_0} = 0$
-
- $C_{m_\alpha} < 0, C_{m_0} > 0$
-
- $C_{m_\alpha} < 0, C_{m_0} = 0$

No, the answer is incorrect.

Score: 0

Accepted Answers:

$C_{m_\alpha} < 0, C_{m_0} = 0$

7) For a static stability level (slope of C_m versus C_L curve is -0.10) and the pitching moment coefficient at zero lift is equal to 0.05, the trim lift co-efficient will be? **1 point**

- 0.05
- 0.01
- 0.50

0.00

No, the answer is incorrect.

Score: 0

Accepted Answers:

0.50

8) For a static stability level (slope of C_m versus C_L curve is -0.01) and the pitching moment coefficient at zero lift is equal to 0.05 and centre of gravity of the air vehicle is located at $\frac{X_{cg}}{c} = 0.31$, stick fixed neutral point $\frac{X_{NP}}{c}$ will be?

0.41

0.10

0.31

0.21

No, the answer is incorrect.

Score: 0

Accepted Answers:

0.41

9) Which condition holds to trim the Unstable UAV at negative angle of attack?

1 point

$C_{m_\alpha} \geq 0, C_{L_0} = 0$

$C_{m_\alpha} \leq 0, C_{L_0} = 0$

$C_{m_\alpha} > 0, C_{L_0} > 0$

$C_{m_\alpha} > 0, C_{L_0} = 0$

No, the answer is incorrect.

Score: 0

Accepted Answers:

$C_{m_\alpha} > 0, C_{L_0} > 0$