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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 3 - Week 2

Course outline

How to access the portal

Week 1

Week 2

- Lecture 4 - Examples, Pitot and static tube and differential pressure sensor. (unit? unit=13&lesson=14)
- Lecture 5 - Generation of Lift and Drag (unit? unit=13&lesson=15)
- Lecture 6 - Aerodynamic center and center of pressure, Various wing planform (unit? unit=13&lesson=16)
- Lecture 7 - Lifting line

Assignment 02

The due date for submitting this assignment has passed. Due on 2019-09-11, 23:59 IST. As per our records you have not submitted this assignment.

1) A High-Altitude Long Endurance (HALE) UAV is cruising at the geometric altitude of 11 km, **2 points** and the velocity (measured by the pitot tube) during this flight is 50 m/s. What will be the corresponding total pressure (in Pa) sensed by the pitot tube?

- 25050
- 21897
- 23049
- 24202

No, the answer is incorrect.
Score: 0

Accepted Answers:
23049

2) A pitot tube is mounted on the nose of an aircraft. The true airspeed of aircraft is 50 m/s at an **2 points** altitude where the values of temperature and density are 216.66 K and 0.364724 kg/m³, respectively. Pressure (in bar) measured by the static probe will be? (Gas constant R = 287 J/kg K)

- 0.2268
- 0.1123
- 0.2458
- 0.3265

No, the answer is incorrect.
Score: 0

Accepted Answers:
0.2268

theory, NACA
airfoil
nomenclature
(unit?
unit=13&lesson=17)

Quiz :
Assignment 02
(assessment?
name=56)

Assignment 02
Solution (unit?
unit=13&lesson=63)

Feedback For
Week 2 (unit?
unit=13&lesson=66)

Week 3

Week 4

Week 5

Week 6

Week 7

Week 8

Text
Transcription

3) If the weight of the Unmanned aircraft is 7500 N, lift to drag ratio of aircraft is 13, wing span **2 points** is 15 m and mean aerodynamic chord is 1 m. The lift coefficient at 27.28 m/s cruise velocity is? (Note: Aircraft is cruising at mean sea level altitude)

- 1.096
 0.93
 1.020
 1.210

No, the answer is incorrect.

Score: 0

Accepted Answers:

1.096

4) The value of C_{m_α} (in per radian), at quarter chord point of a thin aerofoil, will be: **2 points**
(Note: C_{m_α} is the first derivative of pitching moment coefficient with respect to the angle of attack)

- 0.250
 3.141
 1.571
 0.000

No, the answer is incorrect.

Score: 0

Accepted Answers:

0.000

5) Which one of the following aerofoils has a zero camber? **2 points**

- NACA0009
 OFA102
 NACA23012
 Both Option 'NACA0009' and 'NACA 23012' are correct

No, the answer is incorrect.

Score: 0

Accepted Answers:

NACA0009