Assignment 07

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

Due on 2020-11-04, 23:59 IST.

1) During the weight estimation process of fuel powered UAV, the amount of fuel required to complete the mission is dependent on?
   - Range and Lift to Drag ratio UAV
   - Specific fuel consumption and Endurance of UAV
   - Propulsion pitch
   - All of these
   
   Accepted Answers:
   - All of these

2) In general, while estimating the weight of fuel powered UAV, which fraction will be higher among these?
   - Fuel weight fraction
   - Empty weight fraction
   - Friction weight fraction
   - Subsystem weight fraction
   
   Accepted Answers:
   - Empty weight fraction

3) In which phase, the power requirement will be more to fly?
   - Climb phase
   - Take-off phase
   - Cruise phase
   - Both 'climb phase' and 'cruise phase' can be possible
   
   Accepted Answers:
   - Both 'climb phase' and 'cruise phase' can be possible

4) What are the different flight phases which are generally considered for power plant selection?
   - Climb and descent
   - Take-off and landing
   - Cruise and loiter
   - All of these
   
   Accepted Answers:
   - All of these

5) The density ratio at 7 km and 0 km of geometric altitudes is?

   Accepted Answers:
   (Type: Range) 0.60, 0.50

6) The temperature ratio at 7 km and 0 km of geometric altitudes is

   Accepted Answers:
   (Type: Range) 0.77, 0.67

7) The temperature ratio at 13 km and 17 km is?

   Accepted Answers:
   (Type: Range) 0.59, 1.01

8) The pressure ratio at 7 km and 0 km is?

   Accepted Answers:
   (Type: Range) 0.90, 0.410

9) The affecting parameter on UAV take-off distance is?
   - Thrust to weight ratio
   - Wing loading
   - Air density and runway friction
   - All of these

   Accepted Answers:
   - All of these

10) The delta wing UAV of total weight 5 kg is made of symmetrical airfoil is taking off at an angle-of-attack of 5 degrees from mean sea level. The lift curve slope of UAV is 3.6°/N and total reference area is 1.0 meter square. If thrust to weight ratio during take-off is 0.31, find the power required in watt for take-off.

   Accepted Answers:
   (Type: Range) 145.5, 146.5