Indian Institute of Space Science and Technology

AE 111 - Introduction to Aerospace Engineering (I Semester)

Test

Duration: 60 minutes **Total Marks:20**

Name:
SC No: SC
Batch

1. For a turbojet aircraft, at the minimum thrust required condition, L/D is _____. [1]

2. The tangent of glide angle is _____. [1]

3. The lift to weight ratio for steady climb angle of 45° is _____. [1]

4. For a piton-propeller aircraft, at the minimum power required condition, what is the relation between, zero-lift drag and lift-induced drag. [1]

5. What is absolute ceiling? [1]

6. How does power required vary with altitude? [1]

7. A typical glider has weight of 150N and has glide angle of 2.5°. Find Lift produced by the glider. [2]

8. An aircraft is climbing with a 20° of climb angle and a 5° of angle of attack having a mass of 11,000 kg and aircraft drag is 9,000 N then determine engine thrust. [2]

9. To maximize the range for a reciprocating-engine, propeller-driven airplane, we want the following [4]

    1.
    2.
    3.
    4.

10. For maximum endurance for a jet airplane, we want [3]

    1.
    2.
    3.

11. Define rate of climb. [1]

12. During level turning operation an aircraft has load factor of 2. Find the required bank angle for this level turning operation. [2]