

# Aerospace Engineering Fundamentals

Aerospace Engineering · Answer Key · 12 Questions

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**1. Which of the four forces of flight is generated by the pressure difference between the upper and lower surfaces of an airfoil?**

- A) Thrust
- B) Drag
- C) Lift**
- D) Weight

**2. The 'Mach number' is a dimensionless quantity representing the ratio of the speed of an object to what?**

- A) The speed of sound**
- B) The speed of light
- C) Escape velocity
- D) Terminal velocity

**3. Which layer of Earth's atmosphere contains the majority of commercial air traffic?**

- A) Mesosphere
- B) Troposphere**
- C) Thermosphere
- D) Exosphere

**4. What is the primary function of a turbojet engine's compressor section?**

- A) To ignite the fuel
- B) To increase air pressure**
- C) To cool the exhaust gases
- D) To convert rotational energy into lift

**5. In orbital mechanics, what is the term for the point in an elliptical orbit closest to the Earth?**

- A) Apogee
- B) Apoapsis
- C) Perigee**
- D) Zenith

**6. Which aerospace material is prized for its high strength-to-weight ratio and corrosion resistance, commonly used in aircraft structural frames?**

- A) Cast iron
- B) Titanium alloy**
- C) Lead
- D) Concrete

**7. What does the acronym 'HUD' stand for in the context of aircraft cockpit instrumentation?**

- A) High Utility Display
- B) Heated Universal Dial
- C) Head-Up Display**
- D) Hyperlink Unit Data

**8. The 'Venturi effect' explains how fluid pressure decreases when the fluid's speed does what?**

- A) Increases**
- B) Decreases
- C) Remains constant
- D) Reverses direction

**9. Which type of wing configuration features wings that are swept back to delay the onset of wave drag at high speeds?**

- A) Delta wing
- B) Straight wing
- C) Swept wing**
- D) Elliptical wing

**10. What is the main purpose of a 'vertical stabilizer' on an aircraft's empennage?**

- A) To provide roll control
- B) To control yaw stability**
- C) To increase fuel efficiency
- D) To enhance landing gear deployment

**11. The first human-made satellite to orbit the Earth was launched by which nation?**

- A) United States
- B) China
- C) Soviet Union**
- D) France

**12. Which fuel-oxidizer combination is commonly used in liquid-propellant rocket engines?**

- A) Liquid hydrogen and liquid oxygen**
- B) Solid rubber and coal
- C) Diesel and compressed air
- D) Natural gas and water