



# SNS COLLEGE OF TECHNOLOGY

(An Autonomous Institution)  
COIMBATORE-35



## DEPARTMENT OF AEROSPACE ENGINEERING

19AS0301-Basic of Aeronautical Engineering – Question Bank

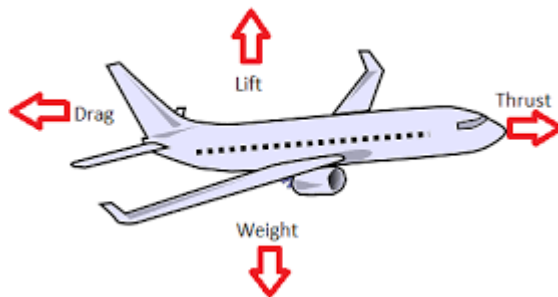
### Two Mark Questions with Answers

1. What is airplane, how it flies?

An **aero plane** is a vehicle with wings and one or more engines that enable it to fly through the air.

Airplane wings are shaped to make air move faster over the top of the wing. When air moves faster, the pressure of the air decreases. So the pressure on the top of the wing is less than the pressure on the bottom of the wing. The difference in pressure creates a force on the wing that lifts the wing up into the air.

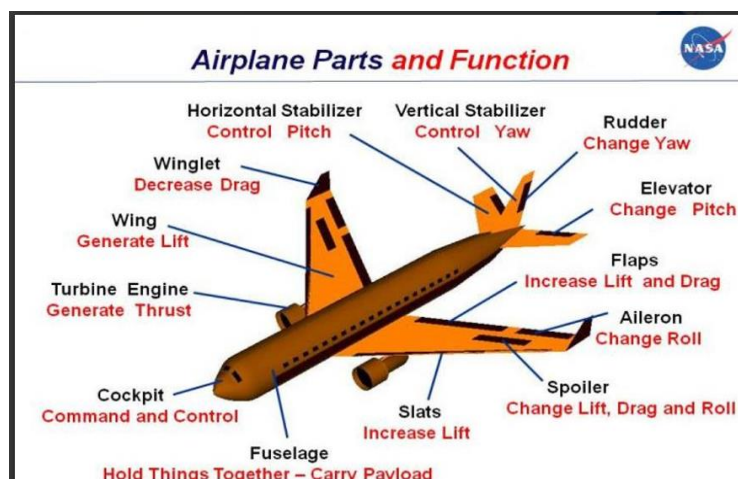
2. Draw an illustration and mention the forces acting of aircraft.



3. Evaluate difference between airplane and aircraft.

An aircraft is any machine that can fly. Airplanes, hot air balloons, helicopters, or even flying platforms are considered aircraft! An airplane is a specific type of aircraft that has fixed wings and is heavier than air that is capable of sustained, powered, and controlled flight.

4. Schematic diagram of A/C and indicate main parts.



5. List out timeline of aircraft revolution.

- 1485-1500 - da Vinci designs planes

Leonardo da Vinci designs flying machines.

- 1709 - Model glider design

Bartolomeu Laurenço de Gusmao designs a model glider.

- 1783 - Hot air balloon flight

The first untethered manned hot air balloon flight was on 21 November 1783 in Paris, France in a balloon created by the Montgolfier brothers.

- 1843 - Biplane design

George Cayley's biplane design is published.

- 1895 - Biplane gliders

Otto Lilienthal flies biplane gliders.

- 1903 - First powered flight

Orville and Wilbur Wright make the first recorded powered, sustained and controlled flight in a heavier-than-air flying machine.

- 1904 - First powered flight in New Zealand

Richard Pearse from New Zealand makes his first recorded powered flight of more than a few seconds, though witnesses contend his first flight may have been just before the Wright brothers

6. Differentiate monoplanes and biplanes.

A biplane has two sets of wings stacked on top of each other. A monoplane is a more modern design and features just one set of wings. Although biplanes have a traditional aesthetic and vintage look, they still provide lightweight structure and dynamic flying capabilities.

7. Materials used to fabricate aircraft.

**METALLIC MATERIALS**

- Alloys
- Aluminum
- Titanium
- Steel Alloys

**NONMETALLIC MATERIALS**

- Reinforced Plastic

- Transparent Plastic
- Composite and Carbon Fiber Materials

8. Expand NACA and its responsibilities.

Created in 1915 to supervise and direct American aeronautical research, the National Advisory Committee for Aeronautics (NACA) helped solve some of flight's most difficult problems.

The NACA was created by Congress over concerns the U.S. was losing its edge in aviation technology to Europe, where World War I was raging. NACA's mission, in part, was to "supervise and direct the scientific study of the problems of flight with a view to their practical solution."

9. Define mach number.

The Mach number is the ratio of flow velocity after a certain limit of the sound's speed. In simple words, it is the ratio of the speed of a body to the speed of sound in the surrounding medium.

Regime	Subsonic	Transonic	Sonic	Supersonic	Hypersonic	Hypervelocity
Mach	<0.8	0.8-1.3	1.0	1.3-5.0	5.0-10.0	>10.0