

# Aerospace Engineering Interview Questions And Answers Guide.



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# Aerospace Engineering Job Interview Preparation Guide.

## Question # 1

Do you know in aerospace engineering what education will I need?

### Answer:-

Generally, a Bachelor's Degree in Aerospace Engineering is required to work as an aerospace engineer. The University of Texas offers this degree as well as Master's and Doctorate programs. Successful aerospace engineers have the proper educational background, possess good communication skills, and are committed to being a part of a team.

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## Question # 2

Do you know what kind of jobs are available for an aerospace engineer?

### Answer:-

The field of aerospace technology offers a wide range of employment opportunities to those with the proper educational background. An aerospace team is made up of engineers, scientists, and technicians. Positions are available through the private sector as well as within the U. S. Government. Examples of major engineering roles in the aerospace industry include:

- \*Analysis
- \*Design
- \*Materials and Processes
- \*Systems Engineering
- \*Software Development
- \*Manufacturing
- \*Flight Research
- \*Field Service

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## Question # 3

Tell us what you know about history of aerospace engineering?

### Answer:-

This branch of engineering was unheard of until the Wright Brothers made their historic flight in 1903. After this event, major developments took place in the field of aeronautical engineering, which basically deals with everything related to aircraft's. During the First World War, many new aircraft's and missiles were developed for military purposes and this gave further boost to its growth.

The study of space was also included in aerospace engineering only in 1958. This expanded the scope of aerospace engineering and gave it a greater chance for taking risks and putting innovative ideas into action. The progress of this branch of engineering is being overseen by many major aerospace corporations like Airbus, Boeing, Honeywell, Embraer, etc.

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## Question # 4

Do you know Who are the aerospace engineers?

### Answer:-

Aerospace Engineers are involved in all aspects of aeronautics (working with aircraft) and astronautics (working with spacecraft). They conduct research, and design and develop vehicles and systems for atmospheric and space environments. These engineers often specialize in one of many areas such as aerodynamics, propulsion, flight mechanics, orbital mechanics, fluids, structures, guidance & control, and computation.

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## Question # 5

Tell us what you know about SPICE?

### Answer:-

The full form of SPICE is Simulation program with integrated circuit emphasis.

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### Question # 6

Do you know Where SPICE was developed?

**Answer:-**

This is the widely used analog simulator, which was developed at electronics research lab of California University.

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### Question # 7

Do you know in aerospace engineering what are the main areas in aviation?

**Answer:-**

Artificial intelligence

- \* Aircrafts and parts
- \* Advanced materials, composites and specialty metals
- \* Computers, electronic components, and systems
- \* Fighters and attack aircraft
- \* Government defense policies and goals
- \* Lasers
- \* Navigation controls and guidance systems
- \* Ordnance and Military vehicles
- \* Computers, electronic components, and systems
- \* Aviation electronic/Avionics
- \* Robotics
- \* Satellites
- \* Search and detection equipments
- \* Strategic defensive initiative
- \* Sensors and instrumentation
- \* Ships
- \* Space vehicles and commercialization of space

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### Question # 8

Do you know What are the three tactical elements of electronic warfare?

**Answer:-**

- \* Electronic warfare has three main elements:  
ES - Electronic support - This has high passive acquisition intelligence about friend and foe  
EA - Electronic attack - that has passive and active denial of RF spectrum  
EP - Electronic protection protects friendly personnel and assets by active and passive techniques.

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### Question # 9

Please tell us requirement to become a Professional Engineer (PE) in the field of Aerospace?

**Answer:-**

Professional Engineer license is required for people who aspire to go in as officially approved engineer. The design specification is done by self-employed people or working in small business. General aerospace engineers work for government or for big companies and hence few people are not very keen on becoming PE's. To become a PE one has to pass an exam on fundamentals of engineering which takes a lot of hours to gruel and work under a licensed PE for about four years. In addition, they have to grow through a principle and practice of engineering exam, which requires about 8 hours.

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### Question # 10

What are day-to-day responsibilities of Aerospace engineering?

**Answer:-**

Each job profile even in aerospace industry differs from others. Mainly in aerospace, there are two branches or field. One is aeronautical and other is astronautical engineering.

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### Question # 11

Tell us what you know about differences between Aeronautical Engineering and astronautical engineering?

**Answer:-**

Aeronautical engineering works on tunnel tests, analyzing flight test data, manned space flights, planning future space missions, spacecraft operations, designing and testing robotic systems, developing new propulsion system, computing optimum flight trajectories, developing communication systems for distance space probes and designing new rockets.

Astronautical engineer includes designing power systems for spacecraft structure, developing communications systems for distant space probes, developing hardware skills for operations in spacecraft, designing and testing robotic systems, developing new propulsion systems and computing optimum flight.

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### Question # 12

Please tell me Does the knowledge of mathematics of Science is required to get into aerospace engineering?

**Answer:-**



The basic understanding of Math is important, as it is not used at all the time during the course of aerospace engineering. One should have a basic understanding of mathematical definitions and knowledge on computers is very important as the computer programs will help in doing simple calculations and verify the results are reasonable.

However, on the science front it is very important to have a very good understanding on various subjects like dynamics and mechanics in physics, strong emphasis on chemistry, electromagnetism. For a good engineer one should know how law of forces makes things happen. In addition, if you are good at physical sciences when opposed to life sciences like biology you will be a fit candidate for aerospace engineering.

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### Question # 13

Tell us what you know about Aerodynamics/performance analysis?

#### Answer:-

Aerodynamics / performance analysis in military programs include responsibility like analyzing aerodynamics impacts which effects from external modifications, developing mission profiles based on requirements from the customer, performance data of the mission which includes take off and landing details, en route and mission data performance. Analyze the configurations using the dynamics, which are fluid and computational.

Additional task may include support for wind tunnel planning for test flight. Documentation, test support, data analysis should be done on regular basis. Co ordination of aerodynamics with multi discipline teams and data should be provided for support flight management system or mission planning software.

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### Question # 14

Please tell us about the responsibility of the spacecraft operations, dynamics, and controls?

#### Answer:-

People working on these areas as aerospace engineers should have familiarity and exposure to NASTRAN and MATLAB with knowledge on space environment and modeling of flexible dynamics. These aerospace engineers will be responsible to work in the areas of structural control, momentum control, line of sight (LOS), spacecraft mission design, control of space boards payloads, operational engineering.

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### Question # 15

Explain what is stress analysis?

#### Answer:-

People working on these areas as an aerospace engineer should have familiarity and exposure to NASTRAN and MAT LAB with knowledge on space environment and modeling of flexible dynamics. These aerospace engineers will be responsible to conduct stress analysis on metallic and composite structures. NASTRAN, IDEAD, Oracle, and PATRAN proficiency level is required. Their duties also include on aircraft, which are metallic and composite structures. This includes and understanding of control surface stiffness and loop calculations, finite element modeling (FEM), fatigue testing requirement and analysis.

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### Question # 16

Please explain what is testing done in aerospace engineering?

#### Answer:-

The testing of small rocket engines and entails development by researching on aerospace. They are responsible to perform and experiment on laboratory facility, which is dedicated to aerospace. One should be capable of solving problems by applying knowledge by solving problem of the research done. They will be working with technical team of researchers and they should have ability handle projects alone.

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### Question # 17

Please explain the components of aerospace engineering?

#### Answer:-

Aerospace engineering deals with design and manufacture of aircraft or spacecraft structures, craft guidance systems, control and navigation's systems, developing tools for communication and finally the production of the aircraft or spacecraft. Each of these areas of aerospace engineering is crucial for efficient functioning of the aircraft or spacecraft. Hence, aerospace engineering has been divided appropriately and knowledge is imparted to aspiring engineers in each of these areas along with the necessary practical training to equip them to deal with the challenges in this field.

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### Question # 18

Do you know what safety recommendations required while maintaining aircraft?

#### Answer:-

The safety recommendations are required while dealing with the accidents and the inquiry of the aircraft's. The recommendations needed are as follows:

- \* CAA (Civil aviation authority) examines the applicability of self-certification of aircraft engineering and verifies the criticality of the tasks that need to be performed on the system. They also check the system for further services without doing any functional checks.
- \* Review of the system takes place to interpret the single components of the aircraft that is vital in its design.
- \* Reviewing of the quality assurance system and the reporting methods take place to encourage more better designs to be provided for the use.
- \* Reviewing the need to, introduce a format of job description and grades that is being provided to the engineers and managers.
- \* Providing a mechanism for an independent assessment to carry out the work audit and operations can be performed smoothly.

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### Question # 19

Please explain the different stress types present in aircraft operations?

#### Answer:-



Stress is a result that is caused when a solid e.g. metal bar is subjected to an external force. Stress is defined as force per unit area and the basic unit includes MN/m<sup>2</sup>, N/mm<sup>2</sup> and Pa. There are basically three types of stress:

- \* Tensile stress: it is the stress that is setup when the force tries to pull the material apart.
- \* Compressive stress: it is the stress that is produced by the force that is trying to crush the material.
- \* Shear stress: is the stress that results from the force that tends to cut through the material i.e. tend to put one material slide over another one.

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### Question # 20

Do you know Why is strain a major factor in aircraft engineering?

**Answer:-**

Strain is when a material is altered in shape, this happens due to the fact that the force is acting on the material. The body is strained internally as well as externally without having any differences of dimension but it just has the differences at the atomic level. It is the ratio of change in dimension over the original dimension. It is very important due to the fact that building an aircraft requires the knowledge of these factors and the formulas that are associated with it to successfully implementing the parts together. There are three types of strain:

- \* Tensile strain
- \* Compressive strain and
- \* Shear strain

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### Question # 21

Do you know what are the different types of modulus involved in mechanics?

**Answer:-**

Modulus of elasticity is given by the Hooke's law that states that stress is directly proportional to strain, while the material remains elastic. The external forces that are acting on the material is just having the sufficient to stretch the atomic bonds this way the material can also return back to the original shape. The different types of modulus are as follows:

- \* Modulus of rigidity: this defines the relationship between the shear stress ( $\tau$ ) and shear strain ( $\gamma$ )
- \* Bulk modulus: this defines that if a body volume  $v$  is subjected to an increase in an external pressure then the volume will be changed by  $dV$ , this deformation will be change in volume not in shape.

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### Question # 22

Do you know what are the mechanical properties required to know before performing maintenance?

**Answer:-**

The mechanical properties provide the definition of the behavior of the material that is being put under the action of external forces. This is an important aspect to aeronautical engineering that is also used to gain knowledge for applications developed for aircrafts. This provides an overall view of the structure of the aircraft and the maintenance aspect of it. The properties used are as follows:

- \* Strength,
- \* Stiffness,
- \* Specific strength and stiffness,
- \* Ductility,
- \* Toughness,
- \* Malleability and elasticity.

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### Question # 23

Do you know what are the main steps required to solve the problems of aircraft flying high and at very large speed?

**Answer:-**

There are various steps required to solve the problems of aircraft flying high and at very large speed are as follows:

- \* Build stiff wings that allow and provide the resistance to torsional diversion beyond the maximum speed of the aircraft.
- \* Use two sets of ailerons and one outboard pair that can be operated at low speeds.
- \* Use of one inboard pair that can be used to operate on high speeds, this will have less twisting impact when the ailerons are positioned outboard.
- \* Use spoilers that can be positioned independently or can be paired with ailerons. These reduce the lift on the down going wing by interrupting the airflow over the top surface.

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### Question # 24

Please explain the functions performed by rudder?

**Answer:-**

The rudder is involved in providing the movement to the ports that gives a lift force to starboard. This will allow the aircraft to turn and uses the ailerons effectively to bank the aircraft by minimum use of rudder. The functions performed by rudder are as follows:

- \* It is used with different applications that are involved in taking off and landing to keep aircraft straight.
- \* Providing assistance that is, limited only for the aircraft to turn correctly.
- \* Used in applications during spin to reduce the roll rate of the aircraft and there are some applications that provides low speeds and high angles to allow the raising of the wings.

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### Question # 25

Do you know what are the criteria need to be followed for an aircraft to be longitudinal statically stable?

**Answer:-**



The criteria that are required for an aircraft to be longitudinal statically stable, is:

- \* To have a nose-down pitching disturbance that is used to produce the aerodynamics forces to give a nose-up restoring moment.
- \* This restoring moment that is produced should be large enough to return the aircraft to its original position after the disturbance.
- \* The requirements are met by using the tail-plane that is horizontal stabilizer used to provide the stability to the aircraft.

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### Question # 26

Explain the characteristics that keep solid and fluid different?

**Answer:-**

- \* When the force is applied tangentially on solid then it experiences a finite deformation and shear stress that is proportional to the deformation. Whereas, when the same shear stress is applied on the surface of fluid then it experiences continuous increasing deformation where, the shear stress is proportional to the rate of change of deformation.
- \* The fluid dynamic is divided in three different areas. They are as follows: Hydrodynamics (flow of liquids), Gas dynamics (flow of gases) and Aerodynamics (flow of air). Whereas, the state of, solid doesn't represent any of the stages.

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### Question # 27

Please explain the objectives of aerodynamics?

**Answer:-**

Aerodynamics deals with the theory of flow of air and it has many practical applications in engineering. There are some objectives that are being used in aerodynamics and these are as follows:

- \* It is used to predict the forces, moments and heat transfer from the bodies that is moving through the liquid.
- \* It deals with the movement of wings or use of the wind force. This way it requires the calculations to be done for the aerodynamic heating of the flight vehicles and the hydrodynamic forces applied on the surface of the vehicle.
- \* It is used to determine the flows that are moving internally through ducts. This way it makes the calculations and measurement of the flow properties that is inside the rocket and jet engines.

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### Question # 28

Do you know what sources involved in aerodynamics?

**Answer:-**

There are two sources that are involved in the case of aerodynamics forces and moments that are on the body. These forces are as follows:

- \* Pressure distribution: this is the distribution that is over the body surface
- \* Shear stress distribution: this is the distribution that is over the body surface

These sources are for the body shapes and it doesn't matter how complex they are. The mechanism that is being used to communicate with the bodies that is moving through a fluid. Both the pressure (p) and shear stress (?) having the dimension force per unit area. This helps the movement of the body through the fluid.

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### Question # 29

Do you know the conditions given for the two flows to be dynamically similar?

**Answer:-**

To measure the dynamicity of the two flows consider two different flow fields over two different bodies. This way the conditions that get generated are as follows:

- \* The streamlined pattern shouldn't be geometrically similar.
- \* The distribution of the volume over change in volume (V/V8), pressure over change in pressure (p/p8), and time over change in time (T/T8). These changes take place throughout the flow of the field and they remain the same against the common non-dimensional coordinates
- \* The force coefficient remains the same.
- \* There is a similarity in both the flows like the solid boundaries are geometrically similar for both flows.

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### Question # 30

Can you please explain the difference between continuum flow and free molecule flow?

**Answer:-**

The flow that is moving over the body i.e. in a circular cylinder of diameter d is the continuum flow, whereas the flow that consists of individual molecules moving in random motion is the free molecule flow.

- \* The mean free path (?) defines the mean distance between the collisions of the molecule and if this path (?) is smaller than the scale of the body measured (d) then the flow of the body is considered as continuum flow.
- \* The path (?) that is of same order as the body scale then the gas molecules then the body surface will have an impact of the molecules and this is known as free molecular flow.

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### Question # 31

Can you please explain the difference between inviscid and viscous flow?

**Answer:-**

\* Viscous flow is the flow in which the molecule moves in random fashion and transfers their mass, momentum and energy from one place to another in fluid. Whereas, an inviscid flow is the flow in which there is no involvement of friction, thermal conduction or diffusion while the molecules are moving.

\* Inviscid flow consists of the limited influence of friction, thermal conduction and diffusion that is limited to thin region that is limited to the body surface. Whereas, the viscous flows involve the flows that dominates the aerodynamics of the blunt bodies like cylinder. In this the flow expands around front face of cylinder and it separates from the rear surface of it.



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### Question # 32

Can you please explain briefly about each property used in mechanics?

#### Answer:-

The properties of the mechanics are as follows:

- \* Strength: this is the applied force on a material that can withstand prior to fracture. It is measured by the proof or yield stress of a material that is under action.
- \* Working stress: this is the stress that is being imposed on a material as a result of the load that is being subjected on the material. The loads that are given must be in the elastic range.
- \* Proof stress: defines the tensile stress
- \* Ultimate tensile stress (UTS): defines of a material that is given by a relationship or its maximum load.
- \* Specific strength: defines the light and strong of a material that is used in aircraft making. This is done to maximize the payload and meeting all the safety requirements.
- \* Malleability: defines the ability to be rolled into sheets or get a shape under pressure. This includes examples of gold, copper and lead.
- \* Elasticity: defines the ability of a material to return to its original shape when an external force is removed from the material.

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### Question # 33

Do you know what is the purpose of load extension graphs?

#### Answer:-

Load extension graphs are used to show the result of mechanical test done on the material to know their certain properties for example finding out the heat treatment of a material. These graphs shows certain phases of a material when it is being tested for destruction of the properties like elastic range, limit of proportionality, etc. The material needs to obey Hooke's law. The elastic limit needs to be at or very near to the limit of proportionality. If the limit is passed the material ceases to be proportional to the load. If the stress increases on the material then the waist reduces as the stress = force/area. This graph represents a curve that shows different stages like elastic stage, and plastic stage.

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### Question # 34

Please explain why is torsion such an important feature in aircraft engines?

#### Answer:-

Torsion is used to drive shafts for aircraft engine driven pumps and motors. They are also involved in having a force behind propeller shafts, pulley assemblies and rive couplings for machinery. The shear stress is setup within the shafts and it results from the torsional loads. The size and the nature of torsional loads and stresses need to be known while making the design or else premature failure can occur. The shafts are used as a component to transmit torsional loads and twisting moments or torque. They can be a cross section or a circular component as it is more suitable to transmit the torque for pumps and motors to supply the power to the aircraft system.

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### Question # 35

Do you know what is the main function of propulsive thrust?

#### Answer:-

Propulsive thrust is used in aircraft system, when an aircraft is traveling through air in straight or level flight then the engine produces a thrust that is equal to the air resistance or the drag force on the aircraft. If the engine thrust exceeds the drag then the aircraft will accelerate and if drag exceeds the engine thrusts then the aircraft system will slow down.

The thrust force that is used for aircraft propulsion should always come from air or gas pressure. The forces that are external always act on the engine or propeller. This propeller can be driven either by a piston or a gas turbine engine. If there is a use of jet engine then the high velocity exhaust gas is produced.

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### Question # 36

Do you know why is the study of gyroscopes motion required to learn aircraft applications?

#### Answer:-

Gyroscopic motion is considered as an important study for aircraft application for the inertia and momentum of the body that is used in circular motion. The momentum is the product of the mass of a body and its velocity. This is a measure of the quantity of motion of a body. Inertia is the force that doesn't allow any change to happen in momentum. Gyroscope is the rotating mass that can be moved freely at right angles to its plane of rotation. This utilizes the gyro rotor or gyroscopic inertia to provide the motion unless it is compelled by an external force to change the state. This uses property of rigidity as gyroscope acts as a reference point in space.

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### Question # 37

Explain the laws of gyro-dynamics?

#### Answer:-

Gyro-dynamics deals with gyroscopic motion that is used for creating aircraft application as it allows inertia and momentum of the body. These laws consist of the two properties of rigidity and precession to provide the visible effects gyro-dynamics. These are as follows:

- \* If a rotating body is mounted and it is free to move about any axis that passes through the center of mass, then the spin axis that is used will remain fixed in inertial space without displacing any of the frame.
- \* If a constant torque is applied to any direction such as about an axis, or perpendicular to the axis, then the spin axis will move about an axis that is mutually perpendicular to both the spin and the torque axis.

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### Question # 38

Do you know what is being expressed by Sperry's rule of precession?

#### Answer:-

Sperry's rule of precession describes about the direction in which the precession takes place. This precession is dependent on the direction of rotation for the mass and the axis of the torque that is applied on the material. It provides a guide to the direction of precession that allows easy finding of the direction of the applied torque. This also helps in finding out the direction of the rotation of gyro-wheel. If the torque is applied and is perpendicular to the spin axis then it can be transferred as a force.

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### Question # 39

Do you know what are the required elements to display oscillatory motion?

#### Answer:-

The elements required to display oscillatory motion are as follows:

Period: this is related to the time and it signifies the time that elapses in between the motion that will repeat itself after some time again. Oscillatory motions allow themselves to be repeated after equal intervals of time and this is called as periodic.

\* Cycle: it represents the completion of one period and it also signifies the motion that is completed in one period.

\* Frequency: defines the number of cycles completed in unit time.

\* Amplitude: defines the distance from one point to another or from highest to lowest point of the motion from the central position.

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### Question # 40

Do you know what are the different lift augmentation devices present?

#### Answer:-

Lift augmentation devices provides flaps that are moving wing sections that increase wing camber and provide an angle of attack. Flaps have their own use like if an aircraft takes off and land in a short distance then the wings of it should produce sufficient lift at lower speed. Flaps provide a way to slow down the aircraft. There are two categories and they are as follows:

\* Trailing edge flaps includes different flaps like

\* Plain flap that is used to retract the complete section of trailing edge and it is used in downward.

\* Split flap gets formed by the hinged lower part of trailing edge and the lowered top surface remains unchanged and it eliminates the airflow that occurs over the top of the surface of the plain flap.

\* Leading edge flaps: is used to augment the low speed lift that is swept on the wing aircraft. They help in increase the camber and allow the coupling to operate together with the trailing edge flaps.

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### Question # 41

Can you please explain the difference between incompressible and compressible flows?

#### Answer:-

\* Incompressible flows are the flows that have a constant density (?). Whereas, the compressible flows are those that consists of variable densities.

\* The flows that exist are compressible in nature. Whereas, incompressible flows, doesn't exist in nature or are very rare.

\* Incompressible flows are used to model aerodynamic problems without losing any detrimental accuracy i.e. most problems that exist in hydrodynamics considers the density (?) = constant. Whereas, compressible flow is hardly used as a mathematical model to, represent the hydrodynamics.

\* High speed flows are and must be treated as compressible, whereas incompressible flows are not considered for high speed flows.

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### Question # 42

Do you know what are the different speed types of flows used in identifying mach number?

#### Answer:-

There are four types of flows that consist of different speeds and can be identified using Mach number:

\* Subsonic flow where  $M < 1$  everywhere, this is a field that is defined as subsonic if it matches the Mach number that is less than 1 at every point. These are displayed by smooth streamlines that consists of no discontinuity in slope. The flow velocity is everywhere less than the speed of sound and the disturbances are all around the flow field.

\* Transonic flow, where mixed regions exist and  $M < 1$  or  $M > 1$ , this is a flow field that defines that the  $M$  is increased just above the unity and it is formed in front of the body. These are the mixed subsonic and supersonic flows that are influenced by both the flows.

\* Supersonic flow where  $M > 1$  everywhere, this type is defined when Mach number is greater than 1 at every point. They are represented by the presence of shock waves across which the flow properties and streamlines changes discontinuously.

\* Hypersonic flow where the speed is greater than supersonic, this is defined when the shock waves moves closer to the body surface and the strength of the shockwave increases leading to higher temperatures between the shock and body surface.

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### Question # 43

Explain the major sectors involved in aircraft maintenance?

#### Answer:-

There are two major sectors involved in aircraft maintenance and these are handled by certifying technician in the field of support and maintenance. These are divided into two sectors as:

\* Category B1 (mechanical): these are the maintenance technicians that have good knowledge regarding the working of air-frame, engine, electrical power systems and equipment. It also requires additional knowledge of aircraft structures and materials.

\* Category B2 (avionic): this deals with the integrated knowledge of aircraft equipment's, electrical, instrument and radar related systems. They undergo proper training to handle the aircraft equipment's and gain practical experience to deal with day to day activities.

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### Question # 44

Do you know what are the operations performed by category B technicians?

#### Answer:-

Category B consists of two sectors in the field of maintenance and they are divided in B1 and B2 with certain roles. The operations performed by Category B technicians are as follows:

- \* Activities related to scheduled on field inspections for aircraft maintenance.
- \* Activities of complex rectification
- \* Fault diagnosis on aircraft systems and their equipment's.
- \* Modification and performing special instruction to monitor and manage the system
- \* Repairing of air-frame and other aircraft's
- \* Activities performed like removal of aircraft components and fitting the required parts.
- \* Use of BITE (built-in test equipment) and diagnostic equipment's to perform repair tasks.
- \* Supervising and certifying the work of other technicians involved in it.

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### Question # 45

Do you know what is the main source of power in aircraft?

#### Answer:-

The main source of power is the hydraulic motor that is provided by the scheduled service and involves operations that allow technicians to solve complex system problems. This setup required certifying the technician to operate all the system the same way as it is been done with one system. The hydraulic motor needs to be operated the same way and maintained in a proper way. The alignment need to in synchronization with the aircraft auxiliary power unity (APU) before anything is done with the aircraft positioning. A standard need to, be followed to maintain the aircrafts and its parts equipped and working.

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### Question # 46

Can you please explain the difference between in the job performed by line maintenance certifying staff and base maintenance certifying staff?

#### Answer:-

The difference that exists between the two is that line maintenance certifying staff has the responsibility to inspect, rectify and perform the related or associated maintenance activities on the aircraft on the airfield. Whereas, the base maintenance certifying staff, perform the maintenance activities away from the live aircraft areas.

The maintenance that is being performed by the line maintenance staff is restricted to use limited tools, and equipments that are present on the site to perform the first line diagnostic maintenance. Whereas, Base maintenance certifying staff is associated with the line maintenance staff as it requires inspecting and performing complex modification in the aircraft carriers.

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### Question # 47

Do you know what is the role performed by category C personnel in maintenance of aircraft?

#### Answer:-

Category C personnel are responsible for maintaining the management role of controlling the progress of the base maintenance inspections and seeing the work that is getting performed. These handle the category B and category A staff and monitor their work. They are responsible for ensuring the good work that will be carried out by providing the certification of maintenance. Category C personnel upon the completion of the maintenance job done by the base maintenance staff provides the certificate to allow the servicing of the aircraft to proceed. This way the people working in the staff become eligible to perform and provide services for flight.

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### Question # 48

Aerospace Engineering Interview Questions Part 1:

#### Answer:-

Why the fuselage of the pressurized aircraft is made of circular cross section?

Can we put engines on the end of a wing? If not, then why?

What is ram jet?

Why you would like to join the aviation industry?

Doesn't simplification of complex honeycomb designed for thermal protection system of are usable launch vehicle jeopardize the accuracy of results?

Why insulating tiles on reusable launch vehicles must be isolated from one another?

Are thermal protection systems of space craft's commonly composed of one panel or a collection of smaller tiles?

Why are all shear loads and twisting moments set to zero for the preliminary design phase of TPS?

How difficult is to mould and shape graphite epoxies compared with alloys or ceramic that may be used for thermal protective applications?

What is the highest temperature the space shuttle undersurface experiences during its mission?

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### Question # 49

Aerospace Engineering Interview Questions Part 2:

#### Answer:-

Why the stall of the swept wing tends to occur at the tips first?

Why the fuselage of the pressurized aircraft is made of circular cross section?

Can we put engines on the end of a wing? If not, then why?

What is ram jet?

Why refrigeration is done inside aircraft, and why aircraft body is made of aluminum's?

Does not simplification of complex honeycomb designed for thermal protection system of are usable launch vehicles jeopardize the accuracy of results?

Are thermal protection systems of space craft's commonly composed of one panel or a collection of smaller tiles?

What is the highest temperature the space shuttle under surface experiences during its mission?



Explain how you overcame a major obstacle?  
What are the main areas in Aviation?

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### Question # 50

Aerospace Engineering Interview Questions Part 3:

#### Answer:-

What is the requirement to become a Professional Engineer (PE) in the field of Aerospace?  
What made you choose aerospace engineer line as your career?  
Explain the day to day responsibilities of Aerospace engineering?  
Explain the differences between Aeronautical Engineering and astronautically engineering?  
What do you understand by Aerodynamics/performance analysis?  
What will be the responsibility of the spacecraft operations, dynamics and controls?  
What is the testing done in aerospace engineering?  
How would you handle if your co-worker is not co-operating with you?  
What would you do if your Captain is not following the instructions properly?  
When can one deviate from any flight rules and regulations?

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### Question # 51

Aerospace Engineering interview questions part 4:

#### Answer:-

When a pilot is assigned a speed, how much can one deviate from that speed?  
Without Air Traffic Control, what is the minimum descent rate you can descend the plane?  
How would you handle the extreme pressure during emergency situation if you know that plane is not safe and it might crash anytime?  
How important is to get the passengers switch off the mobile phones and laptops during land off? What could be the consequences?  
How many types of emergency landings are there and explain?  
What are the three tactical elements of electronic warfare?  
What are the main areas in Aviation?  
What is the requirement to become a Professional Engineer (PE) in the field of Aerospace?  
Explain the differences between Aeronautical Engineering and astronautical engineering?  
Does the knowledge of mathematics of Science is required to get into aerospace engineering?

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### Question # 52

Aerospace Engineering interview questions part 5:

#### Answer:-

What do you understand by Aerodynamics/performance analysis?  
What will be the responsibility of the spacecraft operations, dynamics, and controls?  
What would you do if your Captain were not following the instructions properly?  
When can one deviate from any flight rules and regulations?  
Without Air Traffic Control, what is the minimum descent rate you can descend the plane?  
You are about to take off the plane in few seconds and a catastrophic engine fails, and your captain tells you not to take off and just stay in the center line. What would you do?  
How would you handle the extreme pressure during emergency if you know that plane is not safe and it might crash anytime?  
What operational benefits do hydraulic actuator/rate controls have over gas charged units?  
How do I decide which is the best technology to solve my vibration isolation problem?  
What is isolation efficiency?

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