FAQ's

1. **Briefly explain about ducting layout and design.**

   Designing an efficient system needs, to determine the volume of air required in each zone, to determine the type, number and location of each outlet for the space and air volume required for each outlet. The other considerations are Zoning, Selecting outlets and intakes for supply, return and extract air for air distribution, location of supply, return and exhaust registers, mechanical rooms, duct routing and layout, duct locations, duct fittings and transitions, aspect ratio and standard duct sizes. The general types of ducting layout are: radial system, extended plenum system, reducing plenum system, reducing trunk system and perimeter loop system.

2. **What is the use of Diffusers & Grilles in Air Conditioning system?**

   The conditioned supply air enters the space air diffusers and these diffusers are responsible for well distributed cooling and creating air flow patterns. A grille is a device for supplying or extracting air vertically without any deflection. Return air usually flows into the plenum or return-air box through grilles placed in the false ceiling.

3. **Why is Fresh Air Intake important to Indoor Air Quality?**

   A certain volume of fresh, outside air is sucked into the building AHU. This keeps the air pressure within the building a little higher than the outside air pressure. This prevents dusty, moist or any undesirable external air from infiltrating into the building. If the same air was circulated over and over again it would become 'stale' and make the occupants very uncomfortable, hence it is important to deliver comfort and fresh air in conditioned space.

4. **Explain the role of Filters in Air Conditioning system**

   In order to clean the air it is passed through filters that remove air borne dust particles and ensure delivery of clean air to the conditioned spaces. The filters keep the cooling coils from clogging thereby maintaining the efficiency of heat transfer. Dust choked air filters interfere with the performance of the air system.

5. **Explain the types of Horizontal Distribution Systems**

   There are many types of horizontal distribution systems, like

Mixing system – the air is supplied through an outlet diffuser or grill, at the ceiling or high in the sidewall. This works well for cooling and can produce an even temperature throughout the space.

Displacement system – aims to avoid mixing in the occupied zone. A little cooler than the space air is introduced through large area diffusers in the wall close to the floor. The air flows slowly and steadily, passes a warm object or person and this warmth causes the air to rise up carrying pollutants and heat with it.

Under floor air distribution system – the air is supplied to the cavity below the floor and discharged through numerous small floor grilles. The floor grilles are designed to create mixing and the return air is taken from the ceiling or high on the wall. This rising column of air takes contaminants with it up and out of the breathing zone.

Task ambient conditioning system – each occupant workstation is supplied with cooling air and a degree of control over this airflow, airflow direction and temperature.