



35



Question
&
Answers



HVAC

Engineer Interview
(Mechanical engineer)

1. Question 1. What Is Local Comfort Cooling System?

Answer:

They may be integrated, with heating, ventilation and air conditioning provided by a single system, for example, air handling units connected to ductwork, or they may be a combination of separate systems, for example mechanical ventilation but with radiators for heating and local comfort cooling units.

2. Question 2. What Is Centralized Air System?

Answer:

The most common central cooling system is a split system, which includes an outdoor cabinet containing a condenser coil and compressor, and an indoor evaporator coil, usually installed in conjunction with your furnace. Or air handler. The compressor pumps a chemical called refrigerant through the system.

3. Question 3. What Is Constant Volume System?

Answer:

Constant Air Volume (CAV) is a type of heating, ventilating, and air-conditioning (HVAC) system. In a simple CAV system, the supply air flow rate is constant, but the supply air temperature is varied to meet the thermal loads of a space. Most CAV systems are small, and serve a single thermal zone.

4. Question 4. What Is Variable Air Volume System & Dual Duct System?

Answer:

Variable Air Volume (VAV) is a type of heating, ventilating, and/or air-conditioning (HVAC) system. Unlike constant air volume (CAV) systems, which supply a constant airflow at a variable temperature, VAV systems vary the airflow at a constant temperature.

5. Question 5. What Is Hydronic System or Air-water System?

Answer:

Hydronic systems circulate hot water through warming baseboards, radiators and/or radiant tubing in your floors or ceilings. There are many advantages to heating your home using a hydronic system, whether it is for a new home or as a replacement heating system.

6. Question 6. How Vapor Compression Cycle Works?

Answer:

The Vapor-Compression Refrigeration Cycle is comprised of four steps. ... The condenser is in contact with the hot reservoir of the refrigeration system. (The gas releases heat into the hot reservoir because of the external work added to the gas.) The refrigerant leaves as a high pressure liquid.

7. Question 7. What Is Vapor Compression Cycle?

Answer:

Vapor-Compression Refrigeration or vapor-compression refrigeration system (VCRS), in which the refrigerant undergoes phase changes, is one of the many refrigeration cycles and is the most widely used method for air-conditioning of buildings and automobiles.

8. Question 8. Why Is A Compressor Used In Refrigeration?

Answer:

The compressor does exactly as its name says: it compresses the refrigerant. The compressor receives low pressure gas from the evaporator and converts it to high pressure gas. As mentioned earlier, as the gas is compressed, the temperature rises. The hot refrigerant gas then flows to the condenser.

9. Question 9. What Is Auto Refrigeration?

Answer:

Auto-refrigeration is a process where an unintentional and/or uncontrolled phase change of a hydrocarbon from a liquid state to a vapor occurs, resulting in a very rapid chilling (refrigeration) of the liquid containing local equipment and/or piping.

10. Question 10. How Does A Refrigerant Compressor Work?

Answer:

- The compressor constricts the refrigerant vapor, raising its pressure, and pushes it into the coils on the outside of the refrigerator.
- When the hot gas in the coils meets the cooler air temperature of the kitchen, it becomes a liquid.
- The refrigerant absorbs the heat inside the fridge, cooling down the air.

11. Question 11. Why Capacity Of Air Conditioner Is Measured In Tons?

Answer:

A 4 ton air conditioner is one that can remove 48,000 BTUs of heat per hour from the house. For most people, though, 4 tons means 8000 pounds. (A BTU is a British thermal unit, approximately the amount of heat you get from burning one kitchen match all the way down.)

12. Question 12. What Is The Meaning Of 1 Ton Of Ac?

Answer:

A ton, as used in the HVAC field, is a term that describes how much heat the AC unit can remove from a home in one hour. The measurement for heat is the British thermal unit (BTU). One ton of air conditioning can remove 12,000 BTUs of air per hour.

13. Question 13. What Is An Air Conditioning Ton?

Answer:

A ton is the cooling capacity of an air conditioning system. One ton is equal to the amount of heat required (288,000 Btu) to melt one ton of ice in a 24-hour period. A one-ton air conditioner is rated at 12,000 Btu per hour (288,000/24). A two-ton unit would be rated at 24,000 Btu per hour.

14. Question 14. What Is BTU?

Answer:

The British thermal unit (Btu or BTU) is a traditional unit of heat; it is defined as the amount of heat required to raise the temperature of one pound of water by one degree Fahrenheit. ... Heat is now known to be equivalent to energy, for which the metric unit is the joule; one BTU is about 1055 joules.

15. Question 15. What Is The Meaning Of Btu In Air Conditioners?**Answer:**

Btu – British thermal unit (Btu) is the international measure of energy. A Btu is the amount of heat needed to raise 1 (one) pound of water by 1(one) degree Fahrenheit. In HVAC industry, Btu's measure the quantity of heat a conditioning unit can remove from a room per hours. One BTU per hour is equal to 0293 watts.

16. Question 16. What Is Cfm & Infiltration?**Answer:**

The infiltration rate is the volumetric flow rate of outside air into a building, typically in cubic feet per minute (CFM) or liters per second (LPS). The air exchange rate, (l), is the number of interior volume air changes that occur per hour, and has units of 1/h.

17. Question 17. What Is The HVAC System?**Answer:**

While the Energy Center usually tries to avoid the use of acronyms, HVAC is in common use in the heating and cooling industry. It stands for "heating, ventilation and air conditioning," three functions often combined into one system in today's modern homes and buildings.

18. Question 18. What Does A HVAC Engineer Do?**Answer:**

An HVAC engineer's job duties can include the design, installation, maintenance, and repair of heating, ventilation, air conditioning, cooling, and refrigeration systems.

19. Question 19. What Is Psychometric?**Answer:**

Psychometry is a psychic ability in which a person can sense or "read" the history of an object by touching it. Such a person can receive impressions from an object by holding it in his/her hands or, perhaps, touching it to the forehead.

20. Question 20. What Are The Types Of Air Conditioning Systems?**Answer:****Types of Air Conditioning Systems**

The choice of which air conditioner system to use depends upon a number of factors including how large the area is to be cooled, the total heat generated inside the enclosed area, etc.

- Window Air Conditioner.
- Split Air Conditioner.
- Packaged Air Conditioner.
- Central Air Conditioning System.

21. Question 21. How The Lighting Load Is Calculated?**Answer:**

The standard method consists of three calculation steps: General lighting VA load. When calculating branch circuits and feeder/service loads for dwellings, include a minimum 3VA per

sq ft for general lighting and general-use receptacles [220.12]. When determining the area, use the outside dimensions of the dwelling.

22. Question 22. What Is The Function Of Ahu?

Answer:

An Air Handling Unit (AHU) is used to re-condition and circulate air as part of a heating, ventilating and air-conditioning system. The basic function of the AHU is take in outside air, re-condition it and supply it as fresh air to a building.

23. Question 23. How Does The Ahu Work?

Answer:

An air handler is usually a large metal box containing a blower, heating or cooling elements, filter racks or chambers, sound attenuators, and dampers. Air handlers usually connect to a ductwork ventilation system that distributes the conditioned air through the building and returns it to the AHU.

24. Question 24. What Is The Purpose Of Air Handling Units?

Answer:

An air handler, or air handling unit (often called an AHU), is used to condition and circulate air as part of an HVAC system. An air handler usually contains a blower, heating or cooling elements, filter racks or chambers, sound attenuators, and dampers.

25. Question 25. Where The Fcu's are used?

Answer:

A fan coil unit is a simple device consisting of a heating or cooling coil and fan. It is part of an HVAC system found in residential, commercial, and buildings. Typically a fan coil unit is not connected to ductwork and is used to control the temperature in the space where it is installed, or serve multiple spaces.

26. Question 26. What Is The FCU?

Answer:

A Fan Coil Unit (FCU) is a simple device consisting of a heating and/or cooling heat exchanger or 'coil' and fan. It is part of an HVAC system found in residential, commercial, and industrial buildings.

27. Question 27. What Is The Meaning Of FAHU?

Answer:

FAHU is the abbreviation used for FRESH AIR HANDLING UNIT. These are usually centralized units employed to induce fresh air quantities to the confines spaces. They come into picture wherever there are limitations to fresh air intake either directly or through AHUs.

28. Question 28. What Is An Air Conditioner Condenser?

Answer:

The AC condenser is a very important component found on virtually all modern automotive AC systems. Its primary function is to convert the refrigerant coming from the compressor from a high temperature, high pressure vapor into a high pressure liquid through condensation.

29. Question 29. How Does A Condenser In A Refrigerator Work?**Answer:**

In the refrigeration cycle, there are five basic components: fluid refrigerant; a compressor, which controls the flow of refrigerant; the condenser coils (on the outside of the fridge); the evaporator coils (on the inside of the fridge); and something called an expansion device.

30. Question 30. What Is The Main Function Of A Condenser?**Answer:**

In systems involving heat transfer, a condenser is a device or unit used to condense a substance from its gaseous to its liquid state, by cooling it. In so doing, the latent heat is given up by the substance, and will transfer to the condenser coolant.

31. Question 31. How Does A Condensing Unit Work?**Answer:**

Inside the condenser, the refrigerant vapor is compressed and forced through a heat exchange coil, condensing it into a liquid and rejecting the heat previously absorbed from the cool indoor area. The condenser's heat exchanger is generally cooled by a fan blowing outside air through it.

32. Question 32. What Are The Types Of Condensers?**Answer:**

The three main types of condensers used in general refrigeration systems are:

- air-cooled.
- water-cooled.
- evaporative.

33. Question 33. What Is A Rotary Air Compressor?**Answer:**

A rotary-screw compressor is a type of gas compressor that uses a rotary-type positive-displacement mechanism. They are commonly used to replace piston compressors where large volumes of high-pressure air are needed, either for large industrial applications or to operate high-power air tools such as jackhammers.

34. Question 34. What Is A Gas Compressor Used For?**Answer:**

A gas compressor is a mechanical device that increases the pressure of a gas by reducing its volume. An air compressor is a specific type of gas compressor. Compressors are similar to pumps: both increase the pressure on a fluid and both can transport the fluid through a pipe.

35. Question 35. What Is The Use Of Compressor In Refrigeration?**Answer:**

The compressor does exactly as its name says: it compresses the refrigerant. The compressor receives low pressure gas from the evaporator and converts it to high pressure gas. As mentioned earlier, as the gas is compressed, the temperature rises. The hot refrigerant gas then flows to the condenser.