



CBCS SCHEME

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Question Paper Version : A

Fifth Semester B.E. Degree Examination, June/July 2024
Automotive Heating, Ventilation and Air Conditioning

Time: 1 hr.]

[Max. Marks: 50

INSTRUCTIONS TO THE CANDIDATES

1. Answer all the **fifty** questions, each question carries one mark.
2. Use only **Black ball point pen** for writing / darkening the circles.
3. **For each question, after selecting your answer, darken the appropriate circle corresponding to the same question number on the OMR sheet.**
4. Darkening two circles for the same question makes the answer invalid.
5. **Damaging/overwriting, using whiteners** on the **OMR** sheets are strictly prohibited.

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1. _____ is the primary function of a compressor in a refrigeration system
 - a) To cool the refrigerant
 - b) To increase the pressure of the refrigerant
 - c) To reduce the pressure of refrigerant
 - d) To control the flow of refrigerant
 2. _____ component of a vehicle air conditioning system is responsible for dissipating heat from the refrigerant
 - a) Condenser
 - b) Compressor
 - c) Evaporator
 - d) Expansion valve
 3. In a schematic layout of refrigeration system in a car, the condenser typically located at _____
 - a) Inside the passenger compartment
 - b) Behind the dash board
 - c) Near the engine radiator
 - d) Attached to the compressor
 4. The purpose of expansion valve in a refrigeration system _____
 - a) To increase the pressure of the refrigerant
 - b) To regulate flow of the refrigerant into the evaporator
 - c) To compress the refrigerant
 - d) To cool the refrigerant
 5. _____ is the function of low-pressure switch in a vehicle air conditioning system
 - a) To turn off the compressor when the refrigerant pressure is too low
 - b) To turn off the compressor when the refrigerant pressure is too high
 - c) To regulate the flow a refrigerant into the evaporator
 - d) To control the speed of the fan blower

6. _____ is not a component of a typical refrigeration system
a) Compressor b) Evaporator c) Alternator d) Condenser
7. _____ is the primary function of the condenser in an air conditioning system
a) To compress the refrigerant
b) To cool the refrigerant and change it from a gas to a liquid
c) To increase the pressure of the refrigerant
d) To regulate the flow of refrigerant into the evaporator
8. In a schematic layout of a refrigeration system, _____ component typically follows the condenser
a) Expansion valve b) Evaporator c) Compressor d) Receiver – drier
9. In a refrigeration cycle _____ component is responsible for removing heat from the conditioned space
a) Compressor b) Condenser c) Expansion valve d) Evaporator
10. Primary function of a refrigerant in a refrigeration system _____
a) To provided insulation b) To absorb heat
c) To facilitate heat transfer d) To regulate pressure
11. _____ is the primary function of an automotive heater in a vehicle
a) To cool the interior cabin
b) To regulate the engine temperature
c) To provide warmth to the interior cabin
d) To improve fuel efficiency
12. In a manually controlled air conditioner–heater system temperature is typically adjusted _____
a) By adjusting the engine speed
b) By manually turning a temperature knob or dial
c) By adjusting the tire pressure
d) By activating the deforster
13. In an air conditioning system, _____ is the purpose of the heater are
a) To cool the refrigerant
b) To warm the air blown into the cabin
c) To regulate the flow of refrigerant
d) To compress the refrigerant
14. _____ is not a common issue addressed by a heater diagnosis chart
a) Unusuabe noise coming from the engine
b) Lack of heat in the cabin
c) Coolant leaks
d) Inconsistent air temperature
15. In an automatically controlled air conditioner heater system, _____ regulator the operation of the heater
a) The air filler
b) The Wind shield wipers
c) The brake fluid level
d) The ambient air sensor

16. _____ is the purpose of the air conditioning compressor in relation to the heating system
- To cool the air blown into the cabin
 - To compress the engine coolant
 - To regulate the cabin temperature
 - To circulate refrigerant through system
17. _____ is the role of blower motor in an automotive heating system
- To cool the engine
 - To regulate the engine temperature
 - To circulate air through the heater core and into the cabin
 - To activate the wind shield defroster
18. _____ component of an automatically controlled our conditioner heater system helps maintain a consistent cabin temperature
- The evaporator
 - The condenser
 - The compressor
 - The thermostat
19. _____ is the primary function of the air conditioning heating system in cold weather conditions
- Cooling the interior cabin
 - Warming the interior cabin
 - Regulating engine temperature
 - Increasing fuel efficiency
20. _____ is the following issues could be diagnosed using an air conditioning heating system digenesis chart
- Engine oil leaks
 - Tire pressure issues
 - Heater core malfunctions
 - Transmission problems
21. _____ is not common selection criterion for refrigerants
- Environmental impact
 - Cost
 - Efficiency
 - Color
22. _____ properties are desirable in a refrigerant for effective heat transfer
- Low boiling point and low specific heat capacity
 - High boiling point and low specific heat capacity
 - Low boiling point and high specific heat capacity
 - High boiling point and high specific heat capacity
23. _____ of the following refrigerants has been commonly used in refrigeration and our conditioning but has high global warming potential.
- R – 22
 - R – 134
 - R – 410A
 - R – 1234yf
24. ECO – friendly refrigerants aims to reduce environmental impact by minimizing _____
- Global warming potential
 - Boiling point
 - Specific heat capacity
 - Density
25. Refrigerants are typically stored and transported in _____
- Glass bottles
 - Plastic containers
 - Steel cylinders
 - Aluminium cans

26. _____ precautions should be taken when handling refrigerants to prevent environmental damage and ensure safety
- Release excess refrigerant into the atmosphere
 - Used protective gear and handle cylinders carefully
 - Store refrigerants in open container
 - Dispose of used refrigerants in regular trash bins
27. The role of refrigerants in contributing to ozone depletion _____
- They emit ozone into the atmosphere
 - They absorb ozone from the atmosphere
 - They have no impact on ozone depletion
 - They react with the ozone and break it down
28. _____ makes a refrigerant "Ozone – friendly"
- It absorbs ozone from the atmosphere
 - It does not react with ozone in the stratosphere
 - It emits ozone into to atmosphere
 - It has low impact on ozone depletion
29. _____ is the primary concern regarding the disposal of refrigerant
- Environmental Impact
 - Fire hazard
 - Health risks
 - Economy cost
30. Ozone depleting potential of refrigerant measured by _____
- GWP
 - ODP
 - GDP
 - OWP
31. Psychrometry is concerned with _____
- Pressure and volume of air
 - Temperature and Pressure of air
 - Moisture content and properties of air
 - Air velocity and temperature
32. _____ psychrometric property represents the amount of moisture in the air
- Dry bulb temperature
 - Wet bulb temperature
 - Relative humidity
 - Specific humidity
33. Wet bulb temperature measures _____
- The temperature of the air in contact with a wet surface
 - The temperature of the air in contact with a dry surface
 - The temperature of the air in the shade
 - The temperature of the air in direct sunlight
34. _____ factors affect the design of an air distribution system
- Outside temperature alone
 - Indoor air quality standards
 - Manufacture recommendations
 - Building layout and occupancy

35. _____ is not a type of air distribution system
- Radiant heating
 - Variable Air Volume (VAV)
 - Constant Air Volume (CAV)
 - Under Floor Air Distribution (UFAD)
36. The function of duct system in air conditioning system _____
- Filberts the air
 - Regulates the temperature
 - Distributes the conditioned air throughout the building
 - Release excess moisture from the air
37. The purpose of ventilation in an air distribution system _____
- To increase the humidity level
 - To provides fresh air and remove state air
 - To cool down the indoor air
 - To decrease the air pressure
38. The function of vacuum reserve in an air distribution system
- To prevent air leaks
 - To regulate the air flow
 - To remove dust particles from the air
 - To maintain consistent air pressure
39. _____ is the psychometric property of air
- | | | | |
|-----------|------------|-------------|-----------|
| a) Volume | b) Density | c) Enthalpy | d) Weight |
|-----------|------------|-------------|-----------|
40. Outside design conditions of an air conditioning system are influenced by _____
- Seasonal variations
 - Building occupancy
 - Manufacture's specifications
 - Building insulation
41. Potential cause of air conditions failure _____
- Excessive heat
 - Lack of regular maintenance
 - Environmental factors only
 - Electrical issues only
42. _____ is a part of trouble shooting an air conditioning system,
- Checking thermostat calibration
 - Lubricating moving parts
 - Only checking electrical connections
 - Using UV dye inspection
43. Servicing a heater system typically involve _____
- Checking refrigerant levels
 - Inspecting compressor coils
 - Flushing the heating system
 - Testing for refrigerant leaks

44. The purpose of charging in air conditioning maintenance is _____
a) Removing refrigerant to achieve specified levels
b) Testing the performance of the system
c) Checking for electrical issues
d) Adding refrigerant to achieve specified levels
45. When trouble shooting an air conditioning system, _____ should be checked first.
a) Outdoor temperature
b) Thermostat settings
c) Home insulation
d) Humidity levels
46. _____ is an indicator of a potential mechanical problem in an air conditioning system.
a) High humidity indoors
b) Tripped circuit breaker
c) Clean air filters
d) Uneven cooling throughout the house
47. _____ it is necessary to remove and replace components in an air-conditioning system.
a) Only when the system is completely non-functional
b) Only if the components are visibly damaged
c) As a part of regular maintenance to prevent failure
d) Where the system is over 10 years old
48. _____ is not a component commonly replaced during routine maintenance,
a) Compressor
b) Air filler
c) Capacitor
d) Thermostat
49. _____ component of an air conditioning system is often responsible for electrical failures.
a) Thermostat
b) Compressor
c) Condenser
d) Filter
50. When trouble shooting _____ should be checked if the air conditioner is running but not cooling adequately.
a) Thermostat settings
b) Outdoor temperature
c) Humidity levels
d) Window insulation
