1. What is the principle behind a vapor absorption refrigeration system?

a) Compression of vapor
b) Absorption of vapor
c) Expansion of liquid
d) Condensation of vapor

Answer: b) Absorption of vapor
Explanation: In a vapor absorption refrigeration system, refrigerant vapor is absorbed by a liquid absorbent, leading to the removal of heat and the generation of a refrigerant-absorbent solution.

2. Which refrigerant is commonly used in the aqua-ammonia absorption refrigeration system?

a) R134a
b) R22
c) NH3
d) R410A

Answer: c) NH3
Explanation: The aqua-ammonia absorption refrigeration system typically uses ammonia (NH3) as the refrigerant and water (aqua) as the absorbent.

3. What is the main driving force in a steam jet refrigeration system?

a) Electric motor
b) Steam pressure
c) Compressor

d) Heat exchanger

Answer: b) Steam pressure
Explanation: Steam jet refrigeration systems operate by utilizing the pressure of steam to create a vacuum, which facilitates the refrigeration process.

4. Which type of refrigeration system relies on the entrainment principle for cooling?

a) Vapor compression
b) Steam jet
c) Vapor absorption
d) Thermoelectric

Answer: b) Steam jet
Explanation: Steam jet refrigeration systems work based on the entrainment principle, where a high-pressure steam stream entrains a refrigerant vapor, leading to cooling.

5. Which refrigerant classification is based on their environmental impact potential?

a) Primary refrigerants
b) Secondary refrigerants
c) Halocarbons
d) Ozone-depleting substances

Answer: c) Halocarbons
Explanation: Halocarbons are classified based on their environmental impact potential, particularly concerning ozone depletion and global warming potential.

6. Which leak detection method relies on the detection of ultraviolet (UV) light emitted by a fluorescent dye added to the refrigerant?

a) Halide torch
b) Ultrasonic
c) Infrared
d) Fluorescent

Answer: d) Fluorescent
Explanation: Fluorescent leak detection involves adding a fluorescent dye to the refrigerant, which emits UV light under certain conditions, making leaks visible under UV light.

7. What property of refrigerants indicates their ability to absorb and release heat efficiently?

a) Viscosity
b) Specific heat
c) Latent heat
d) Thermal conductivity

Answer: c) Latent heat
Explanation: Latent heat is the property of refrigerants that indicates their ability to absorb and release heat efficiently during phase changes, such as vaporization and condensation.

8. Which refrigerant is commonly used as a replacement for chlorofluorocarbons (CFCs) due to its lower ozone depletion potential?

a) R22
b) R410A

c) R134a
d) R32

Answer: d) R32
Explanation: R32 is commonly used as a replacement for CFCs due to its lower ozone depletion potential and relatively lower global warming potential compared to other alternatives.

9. What is the purpose of using a brine solution in refrigeration systems?

a) Lubrication
b) Heat transfer
c) Insulation
d) Pressure regulation

Answer: b) Heat transfer
Explanation: Brine solutions are used in refrigeration systems for their ability to efficiently transfer heat between the refrigerant and the surroundings, especially in low-temperature applications.

10. Which refrigerant classification includes substances that do not contribute to ozone depletion or have a negligible impact?

a) A1
b) A2
c) B1
d) B2

Answer: a) A1

Explanation: A1 refrigerants are classified as substances with low toxicity and flammability that do not contribute to ozone depletion or have a negligible impact on the environment.

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