EPA Core Practice Exam

Question # 1: Which of the following refrigerant has a GWP closest to "1"? A R-22 B R-134a C R-410A D R-1233zd

Question # 2: The condenser

A changes a high-pressure vapor to a high-pressure liquid.

B changes a low-pressure vapor to a low-pressure liquid. C changes a high-pressure liquid to a low-pressure liquid.

D changes a low-pressure liquid to a low-pressure vapor.

Question # 3: Recover any remaining refrigerant and then render the cylinder useless, then recycle the metal is the proper disposal method for;

- A Recovery cylinders
- B One pound cans
- C Disposable cylinders
- D Accumulator cylinders

Question # 4: The chlorine in CFCs and HCFCs

A will dissolve in water.

B will not dissolve in water.

C will rain out of the atmosphere.

D. is heavier than air and cannot rise to the stratosphere.

Question # 5 How much can a person be fined per day per violation for knowingly releasing a regulated substance that violates the Clean Air Act? A \$10,000

B \$25,000

C \$37,000 D \$44.539

Question # 6 Crop loss, eye disease, and skin cancer have been attributed to;

A Depletion of Stratospheric nitrogen

- B Depletion of Stratospheric chlorine monoxide
- C Depletion of Stratospheric ozone
- D Depletion of Stratospheric oxygen

Question # 7: What is the Significant New Alternatives Policy (SNAP) Program?

A EPA's program that identifies refrigerants with lower overall risks to human health and the environment. B Covers only CFC and HCFC refrigerants used in residential air conditioning.

C Relates to CFC and HCFC refrigerants used in commercial air conditioning.

D Covers only CFC and HCFC refrigerants used in industrial process refrigeration.

Question #8 Reusable refrigerant containers under high-pressure must be hydrostatically tested how often? A 1 year

B 3 years C 5 years

D 7 years

Question # 9 HFCs

A will not damage stratospheric ozone, but have a high GWP.

B will damage stratospheric ozone and have a low GWP. C will not deplete stratospheric ozone and have a low GWP.

D are only harmful to ground level ozone.

Question # 10: The compressor ____

A changes a high-pressure vapor to a high-pressure liquid.

B changes a low-pressure vapor to a high-pressure vapor.

C changes a high-pressure liquid to a low-pressure liquid.

D changes a low-pressure liquid to a low-pressure vapor.

Question # 11 Before shipping any used refrigerant cylinders, check that the cylinder meets what standards: A Department of Transportation

- B The Significant New Alternatives Policy (SNAP)
- C Underwriters Laboratories
- D All of the above

Question # 12 A refrigerant cylinder designed to hold recovered refrigerant has a: A yellow body and grey top.

B grey body and yellow top.

- C green body and yellow top.
- D orange body and grey top.

Question # 13 Which international agreement (Treaty) regulated the production and use of CFCs, HCFCs, halons, methyl chloroform and carbon tetrachloride? A Kyoto Treaty B Montreal Protocol C Council of Nicaea

D Treaty of Ghent

Question # 14 The low-side test-pressure data-plate value should be used by a technician to determine a safe pressure for:

- A recovering refrigerant.
- B leak testing.
- C refrigerant charging.
- D retrofitting a system.

Question # 15 HCFCs contain

A Chlorine, Fluorine, and Carbon

- B Hydrogen, Chlorine, Fluorine, and Carbon
- C Hydrogen, Fluorine, and Carbon
- D Hydrogen, Fluorine, and Olefin

Question # 16 Which of the following has the highest Ozone Depletion Potential?

A HFOs **B HCFCs** C HFCs D CFCs

Question #17

Which ASHRAE classification means slightly flammable? AA1

B A2L CA3

D B1

Question #18

To process refrigerant to a level equal to new (virgin) product specifications as determined by chemical analysis defines A Recovery **B** Reclaiming

C Reuse

D Recycle

Question # 19 The molecule found in CFCs and HCFCs that depletes ozone is

A Fluorine **B** Hydrogen

C Carbon

D Chlorine

Question # 20 Clean refrigerant for reuse by separating the oil from the refrigerant and removing moisture from the refrigerant by passing it through one or more filter driers, is the definition of

A Recover

B Reclaim

C Reuse

D Recycle

Question # 21 An ozone molecule contains A One oxygen atom

B Two oxygen atoms

C Three oxygen atoms

D Four oxygen atoms

Question # 22

A single chlorine atom can destroy how many ozone molecules? A 100 B 1,000 C 10,000 D 100,000

Question # 23 Which of the following refrigerants is an

HFO? A R-22 B R-134a C R-410A D R-1234ze

Question #24

Which type of refrigerant contains no chlorine?

A HCFCs **B HCFC Blends** C HFCs D CFCs

Question # 25 Silicone elastomers, for use in seals and gaskets, are not compatible with which refrigerants? A HCFCs **B**CFCs C HFOs D HFCS

Type I Practice Exam:

Question #1 After the refrigerant has been recovered. which of the following can be used to flush the system? A R-22 B Compressed air C Nitrogen

D Water

Question #2 If a strong odor is detected while performing a refrigerant recovery process, A The condenser has been operating incorrectly. B A compressor burnout has likely occurred. C The wrong oil has probably been installed in the unit. D The system has likely been subjected to a power surge.

Question # 3 Which of the following is true regarding refrigerant leaks on small appliances? A EPA does not require repair, but leaks should be repaired whenever possible.

B All leaks on Type I equipment must be repaired.

C Only very large leaks must be repaired.

D All systems with an annualized leak rate of 15 percent or greater must be repaired.

Question # 4 When pressurizing a system with nitrogen vou should:

A never exceed 3.5 times the high side pressure rating. B charge through a pressure regulator. C install a relief valve in the line downstream from the

pressure regulator.

D Both B and C.

Question # 5 A small appliance is defined by EPA as; A Appliances charged, and hermetically sealed in a factory that contain 8 lbs or less of refrigerant. B Appliances charged, and hermetically sealed in a factory that contain 10 lbs or less of refrigerant. C Appliances with internal volumes no greater than 3 cubic feet.

D Appliances manufactured, charged, and hermetically sealed in a factory that contain 5 lbs or less of refrigerant.

Question # 6 Which of the following is an example of a non-condensable? A Moisture B Air

Question # 7 If regulations change after the technician becomes certified;

A The technician must re-take the certification exam. B An additional fee must be paid to the EPA by the technician.

C The technician is responsible for complying with any changes to the regulations.

D There are no additional compliance requirements for the technician.

Question # 8 When a system is in deep vacuum;

A Never add refrigerant to the system.

B Never use a micron gauge.

C Never energize the compressor.

D Never energize system fans and blowers.

Question #9 Which HC refrigerant is allowed for use in NEW Domestic Small Appliances?

A R-404A B R-410A C R-600a D R-717

Question # 10 Self-contained or active recovery equipment

A Depends on a special charcoal bag filter.

B Has its own means to recover refrigerant.

C Is not capable of reaching the required liquid rates.

D Requires a vacuum pump rated at more than 3 CFM.

Question # 11 When filling a charging cylinder with a regulated refrigerant;

A The refrigerant vapor that is vented off the top of the cylinder must be recovered.

B The refrigerant must be added to the cylinder in the vapor phase to reduce losses.

C The refrigerant being added to the cylinder must be weighed in to ensure accuracy.

D The refrigerant vapor can be vented off the top of the cylinder as a deminimus release.

Question # 12 Type I Certification is required for A persons handling refrigerant during maintenance, service, or repair of small appliances.

B all persons who work in the factory that produces refrigerants.

C all persons working at a refrigerant disposal site. D owners of manufacturing companies that produce CFCs.

Question # 13 Technicians who perform sealed-system service on small appliances must have;

A Type I, II, or III certification.

B Type I or Universal certification.

C Type II certification.

D A Universal 609 certification

Question # 14

Recovery equipment must be

A CSA approved.

B Certified by an EPA-approved testing laboratory.

C Used on all equipment manufactured after July 1, 1995.

D Used on all equipment manufactured after November 15, 1995.

Question # 15 When using a system-dependent recovery system on an appliance that has an operating compressor, the technician should

A Run the compressor and recover from the low side of the system only.

B *Install* access fittings on both the high and low-pressure sides of the system.

C Run the compressor and recover from the high side of the system only.

D Never allow the refrigerant to go to the high side of the system.

Question # 16 Small appliances in recreational vehicles may use refrigerants such as Ammonia, Hydrogen, and water. These refrigerants

A Must be recovered.

B Should not be recovered.

C Should be stored for later use.

D Must be pressurized prior to use.

Question # 17 Small appliances are equipped with a straight piece of tubing (process stub) that is used; A As the installation location for a piercing-type access valve.

B To help the technician measure system subcooling. C As a p-trap to help capture system contaminants and debris.

D To help the technician measure evaporator superheat.

Question # 18 Applying heat, with a heat gun, to the compressor

A can help free-up a bound compressor motor. B can help vaporize any trapped liquid refrigerant during

recovery. C can help remove trapped refrigerant vapor during recovery.

D can aid in isolating and pinpointing a refrigerant leak.

Question # 19 System-dependent recovery methods may only be used on appliances containing;

A 20 pounds of refrigerant or less.

B 18 pounds of refrigerant or less.

C 15 pounds of refrigerant or less.

D More than 15 pounds of refrigerant.

Question # 20 On a system with an operating compressor, recovery equipment must be capable of recovering

A 95% of the refrigerant or achieving 5 inches of vacuum.

B 90% refrigerant or achieving 4 inches of vacuum. C 80% refrigerant or achieving 4 inches of vacuum. D 100% refrigerant or achieving 0 inches of vacuum.

Question # 21 System-dependent or passive recovery equipment;

A Captures refrigerant into a non-pressurized container.

B Captures refrigerant into one-trip refrigerant cylinders.

C Always requires the assistance of a vacuum pump.

D Is always equipped with an external compressor.

Question # 22 When using a system-dependent recovery system on an appliance that has a non-operating compressor, the technician should_______ A Place access fitting on both the low and high side of the system.

B Not heat the oil to release refrigerant.

C Send the unit to the junk yard to be crushed.

D Cut the unit's suction line to release the refrigerant.

Question # 23 With a non-operating system

compressor, recovery equipment must be capable of recovering

A 90 percent of the refrigerant or achieving 4 inches of vacuum.

B 90 percent of the refrigerant or achieving 5 inches of vacuum.

C 80 percent of the refrigerant or achieving 5 inches of vacuum.

D 80 percent of the refrigerant or achieving 4 inches of vacuum.

Question # 24 Recovering multiple types of refrigerants in the same cylinder

A Is an acceptable field service practice.

B will make the reclaimed refrigerants unreclaimable.

C will require venting to properly dispose of it.

D will lower the pressure in the recovery cylinder.

Question # 25 If, after installing a fitting for the purpose of recovering the appliance's refrigerant, you find that the system pressure is 0 psig

A Utilize recovery equipment to achieve a 4-inch vacuum.

B Pressurize the system with nitrogen prior to recovery. C Refrigerant recovery is not required.

D Pressurize the system and leak test.

Type 2 Practice Exam:

Question # 1 All HVAC/R systems must be protected by a

A Low-pressure switch

B High-pressure switch

- C Compressor impedance overload
- D Pressure relief valve

Question # 2 Proper recovery techniques begin with the use of appropriate recovery equipment that has been certified by A EPA only

B Manufacturers approved by UL

C EPA approved laboratory

D EPA field supervisors

Question # 3 When using a recovery unit on a system containing 100 lbs. of R-410A it must be evacuated to A 0 inches of Mercury B 4 inches of Mercury C 10 inches of Mercury D 15 inches of Mercury

Question # 4 Unless plans are made to replace a system with a leak rate that exceeds the maximum leak rate, repairs must be made within;

A 30 days.

B 45 days.

C 60 days

D 90 days.

Question # 5 A high-pressure appliance containing 210 lbs. of R-407C refrigerant must be evacuated (recovered) to a level of A 15 inches of vacuum B 10 inches of vacuum C 4 inches of vacuum D 0 inches of vacuum

Question # 6 EPA regulations state that removal of which component constitutes a "major repair"? A Pressure switch

B Compressor

C Liquid line drier

D Evaporator fan motor

Question # 7 A refrigerant sensor which will sound an alarm and automatically start a ventilation system in occupied equipment rooms falls under ASHRAE Standard;

- A 15
- B 34

C 44

D 60

Question #8 What must the equipment owners/operators include in recovered refrigerant records for equipment with refrigerant charges that range from 5 to 50 pounds?

A The quantity of refrigerant (by type) added or recovered from disposed appliances each year and quantity of refrigerant (by type) sent for reclamation or destruction.

B The quantity of refrigerant (by type) added or recovered from disposed appliances in each calendar month and quantity of refrigerant (by type) sent for reclamation or destruction.

C The type of refrigerant, the amount added for seasonal variance, the amount added to a new unit, recovered from disposed appliances in each calendar month and

quantity of refrigerant (by type) sent for reclamation or destruction.

D The amount of new refrigerant added to a system in each calendar month and quantity of refrigerant (by type) sent for reclamation or destruction.

Question #9 When dehydrating a system, it should be evacuated to a minimum level of;

A 30 inches of Mercury B 25,000 Microns C 500 Microns D EPA does not have a requirement

Question # 10 Which of the following refrigerants is classified as a very high-pressure refrigerant? A CFC-11 B R-744 C HCFC-123 D R-410A

Question # 11 A high-pressure appliance containing less than 200 lbs. of an HCFC or HFC refrigerant must be evacuated (recovered) to a level of

A 15 inches of vacuum

B 10 inches of vacuum

C 4 inches of vacuum

D 0 inches of vacuum

Question # 12 If a leaking appliance with a regulated refrigerant is not going to be repaired, it must be A retrofitted or retired within 3 months. B retrofitted or retired within 12 months. C replaced within 3 months. D replaced within 12 months.

Question # 13 When an appliance containing 50 pounds or more of a regulated refrigerant leaks refrigerant at an annual rate of 125% or more, what must be included on the leak inspections records?

A Initial verification, verification tests and records of recovered refrigerant from equipment.

B Quantity of refrigerant sold, procedures performed, date of call, name, address and phone number of manufacturer.

C Quantity of refrigerant, address of service technician, number of years in HVAC.

D The amount of refrigerant and addresses only.

Question # 14 A crankcase heater is often used to prevent refrigerant from mixing with compressor oil during periods o

A Low ambient temperature

B High ambient temperature

C Low humidity

D High humidity

Question # 15 Leaks must be repaired on industrial process and refrigeration units with a 50-pound charge or greater when the annualized leak rate reaches _____ or more.

A 10% B 20% C 30% D 40%

Question #16 EPA regulations require that all Industrial Process Refrigeration (IPR) systems containing more than 50 pounds of refrigerant MUST be repaired when the annual leak rate exceeds;

A 10 % B 20 % C 30 % D 40 %

Question # 17 Refrigerants CFC-12, HCFC-22, and HFC-134a are all classified as Type _____ substances.

A B-1

B B-2

C A-1

D A-2

Question # 18 A comfort cooling system that contains 50 pounds or more of R-410A is leaking. What will be the new maximum allowable annual leak rate starting in 2019?

A 5% B 10%

C 15%

D 20%

Question # 19 What happens to a refrigerant that is heated above the saturation temperature?

A It remains in the vapor state.

B It remains in the liquid state.

C It absorbs moisture at an increased rate.

D It cools the compressor more efficiently.

Question # 20 When recovering refrigerant from a medium-pressure system with more than 200 lbs. of refrigerant, recover to a level of_

A 0" Hg B 4" Hg C 10" Hg D 15" Hg

Question # 21

Non-condensables will cause; A Low superheat B Low discharge pressure C High superheat

D High discharge pressure

Question # 22 Refrigerant should be recovered from the condenser outlet if the condenser is;_____ A Below the receiver B Above the receiver

C On the roof

D Is leaking

Question # 23 What can be done with a refrigerant trace gas and nitrogen mixture after a system leak is found?

A Recover the mixture.

B Recover in a special recovery tank.

C Recycle the refrigerant back into the system.

D Release to the atmosphere.

Question # 24 A new split system should be checked for leaks by

A pressurizing the system with a few ounces of HCFC-22 and compressed air.

B pressurizing the system with a few ounces of CFC-12 and an inert gas.

C releasing the factory refrigerant charge in the condensing unit.

D pressurizing the system with a few ounces of system refrigerant and an inert gas.

Question # 25 What conditions allow for a system to be opened and repaired without recovering the refrigerant to the required vacuum level?

A A system with a large leak and internal pressure of 0 psia

B A system that is undergoing a major component replacement

C A system that uses a CFC refrigerant

D A system that has a non-operational compressor

Type 3 Practice Exam

Question #1 When pressurizing a low-pressure system for leak-detection purposes, do not exceed

A 5 psia B 10 psig C 15 psig

D 20 psig

Question # 2 What can be used to pressurize a chiller system before opening the system for a non-major repair? A Controlled hot water

B Nitrogen

C R-409A

D Compressed air

Question #3 Where is the purge unit located in a lowpressure system?

A The top of the condenser.

B In the lowest location.

C Above the shell.

D Before the oil separator.

Question # 4 In a low-pressure chiller, air and other non-condensables collect at the;

A bottom of the compressor.

B top section of the condenser.

C bottom of the evaporator.

D header before the metering device.

Question # 5 If a strong odor is detected during the recovery process,

A the refrigerant is most likely R-717 (Ammonia).

B the purge unit on the condenser has opened.

C a compressor burn-out may have occurred.

D it is a good indicator that R-123 is the refrigerant being recovered.

Question # 6 The Standard for machine room safety is;

A ASHRAE-15 **BASHRAE-34** C AHRI-740 **D EPA-740**

Question #7 During evacuation of systems with large amounts of water, it may be necessary to; A increase pressure by introducing nitrogen to

counteract freezing.

B purge the condenser by removing nitrogen to encourage freezing.

C drain the compressor by removing nitrogen to encourage freezing.

D decrease pressure by introducing nitrogen to counteract freezing.

Question #8 Which of the following best describes the refrigerant recovery process from an R-123 system? A Start with vapor removal and then switch over to liquid recovery.

B Start with liquid removal and then switch over to vapor recovery.

C Run the compressor and only recover refrigerant in the liquid state.

D Run the compressor and only recover refrigerant in the vapor state.

Question #9 The EPA-required evacuation level for recovery or recycling equipment used on low-pressure systems is

- A 15 inches Hg.
- B 20 inches Hg.
- C 25 mm of Hg absolute.
- D 30 inches Hg absolute.

Question # 10 The owner must keep records of refrigerant added to a low-pressure system during service and maintenance if the system charge is; A 25 pounds or greater.

- B 50 pounds or greater.
- C 100 pounds or greater.
- D 150 pounds or greater.

Question # 11 A low-pressure chiller used for comfort cooling must be repaired if it has an annual leak rate of of the total charge.

- A 10 percent B 20 percent
- C 30 percent
- D 50 percent

Question # 12 Because a low-pressure system operates below atmospheric pressure (in a vacuum),

A the system is unlikely to have air and moisture enter the system.

B leaks in gaskets or fittings will cause air and moisture to enter the system.

C leaks in the gaskets or fittings will cause substantial refrigerant leaks.

D leaks in the gaskets or fittings will cause oil clogging at the condenser.

Question # 13 Where is refrigerant added to a low-pressure system during the charging process?

A The access valve on the purge unit entering the condenser.

B The lowest access point on the system such as the condenser charging valve.

C The highest access point on the system such as the evaporator inlet valve.

D The lowest access point on the system such as the evaporator charging valve.

Question # 14 Under ASHRAE Standard 34, R-134a is classified as;

A A1 B A2 C B1

D B2

Question # 15 To repair a chiller operating with R-22, the technician;

A does not need a certification.

B must have a Type I certification.

C must have a Type II certification.

D must have a Type III certification.

Question #16 After all the liquid has been removed from an average 350-ton, low-pressure appliance, approximately how much vapor refrigerant remains in the system? A 100 pounds

B 150 pounds

C 350 pounds

D 45 pounds

Question # 17 The rupture disk on a low-pressure chiller has a burst pressure of;

A 5 psig B 10 psig C 15 psig D 20 psig

Question # 18 Which organization establishes the refrigerant safety group standard? A AHRI B UL C ASHRAE D ASE **Question # 19** When leak testing a low-pressure chiller, the maximum pressure to use is;

A 5 psig. B 10 psig.

- C 15 psig.
- D 20 psig.

Question # 20 When charging a low-pressure system, refrigerant should be introduced to the system as a vapor to raise the system's saturation temperature to a minimum of; A 0 degrees. B 36 degrees.

C 40 degrees.

D 70 degrees.

Question # 21 Which of the following refrigerants has a safety classification of B-1 A CFC-12 (R-12) B HFC-134a (R-134a) C HCFC-123 (R-123) D CFC-11 (R-11)

Question # 22 How long would an equipment owner or operator have to retrofit or retire an appliance that has exceeded the threshold leak rate if the replacement appliance uses 50 pounds or more of an exempt refrigerant? A 24 months. B 18 months.

C 12 months.

D 3 months.

Question # 23 What type of equipment can be worked on with Type III certification?

A High-pressure

B Medium-pressure

- C Low-pressure
- D Vacuum pressure

Question # 24 The most efficient method of leak checking a charged low-pressure refrigeration unit is to; A pressurize the system using controlled hot water or heater blankets.

B pull a 500-micron vacuum and hold for at least 12 minutes.

C pull a 20-inch vacuum and hold for at least 24 hours. D pull a 29.9-inch vacuum and hold for at least 24 hours.

Question # 25 When installing more than one, pressure relief valves must be installed;

A in series with each other.

B in parallel with each other.

C in the system's suction line.

D on top of compressor head.

Key for Core 1 D 2 A 3 C 4 B 5 D 6 C 7 A 8 C 9 A 10 B 11 A 12 B 13 B 14 B 15 B 16 D 17 B 18 B 19 D 20 D 21 C 22 D 23 D 24 C 25 C	Type 2 Key: 1 D 2 C 3 A 4 A 5 B 6 B 7 A 8 B 9 C 10 B 11 D 12 B 13 A 14 A 15 C 16 C 17 C 18 B 19 A 20 D 21 D 22 A 23 D 24 D 25 A
Type 1 Key: 1 C 2 B 3 A 4 D 5 D 6 B 7 C 8 C 9 C 10 B 11 A 12 A 13 B 14 B 15 C 16 B 17 A 18 B 19 C 20 B 21 A 22 A 23 D 24 B 25 C	Type 3 Key 1 B 2 A 3 A 4 B 5 C 6 A 7 A 8 B 9 C 10 B 11 A 12 B 13 D 14 A 15 C 16 A 17 C 18 C 19 B 20 B 21 C 22 B 23 C 24 A 25 B

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