

# EPA Type II Certification Practice Exam

## Core

- Ozone in the stratosphere above the earth consists of:
  - Molecules containing 3 oxygen atoms.
  - Molecules of 2 oxygen atoms.
  - Radioactive particles.
  - Pollutants that have risen from ground level.
- Each chlorine atom in the stratosphere can destroy \_\_\_\_\_ ozone molecules
  - 1.
  - 3.
  - 100,000.
  - Chlorine is not the element in refrigerant that harms ozone.
- Which atom of the CFC molecule causes ozone depletion?
  - Fluorine.
  - Chlorine.
  - Carbon.
  - Hydrogen.
- Ozone depletion in the stratosphere is what type of problem?
  - Local.
  - Regional.
  - National.
  - Global.
- What characteristic(s) of CFC make them more likely to reach the stratosphere than most other compounds containing chlorine?
  - CFCs neither dissolve in water nor break down into compounds that dissolve in water so they do not rain out of the atmosphere.
  - CFCs are lighter than other compounds, making it easier for them to float upward when released.
  - CFCs are stored under pressure, causing them to jet upward when released.
  - CFCs are attracted to ultraviolet radiation.
- Which of the following gases help form the earth's protective shield?
  - Methane.
  - Radon.
  - Stratospheric ozone.
  - Carbon dioxide.
- Which type of refrigerant is the most harmful to stratospheric ozone?
  - CFC.
  - HCFC.
  - HFC.
  - Ammonia.
- What is being done in the U.S. to stop damage to the stratospheric ozone layer?

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- a. Using natural gas instead of coal to generate electricity.
  - b. Capturing and ultimately eliminating use of chlorofluorocarbons.
  - c. Enforcing strict emission requirements on incinerators.
  - d. All of the above.
9. Which of the following is/are violation(s) of the Clean Air Act?
- a. Falsifying or failing to keep required records.
  - b. Failing to reach required evacuation levels before opening or disposing of appliances.
  - c. Knowingly releasing CFC or HCFC refrigerants or their substitutes while repairing appliances.
  - d. All of the above.
10. Some state and local governments may establish laws that;
- a. Follow the Clean Act/EPA regulations.
  - b. Are not as strict as the Clean Air Act/EPA regulations.
  - c. Contain stricter regulations than the Clean Air Act/EPA regulations.
  - d. Both "A" and "C".
11. Before you dispose of any appliance containing a CFC or HCFC refrigerant, you must;
- a. Recover the refrigerant.
  - b. Purge the appliance with nitrogen.
  - c. Flush the appliance with R-11.
  - d. Seal the appliance so no refrigerant can escape.
12. Service technicians who violate Clean Air Act provisions;
- a. May be fined.
  - b. May lose certification.
  - c. May be required to appear in Federal court.
  - d. All of the above.
13. An award of up to what amount may be paid to a person supplying information that leads to a penalty against a technician who is intentionally venting?
- a. \$5,000.
  - b. \$10,000.
  - c. \$25,000.
  - d. \$50,000.
14. Service technicians who violate Clean Air Act provisions;
- a. May be fined.
  - b. May lose certification.
  - c. May be required to appear in Federal court.
  - d. All of the above.
15. Blended refrigerants leak from a system;
- a. At a faster rate than other refrigerants.
  - b. At uneven rates due to different vapor pressures.
  - c. At a slower rate than other refrigerants.
  - d. Only if the line breaks completely.
16. R-134 refrigerant charged systems should be leak checked with;

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- a. CFCs.
  - b. HCFCs.
  - c. Pressurized nitrogen.
  - d. Compressed dry air.
17. The state of the refrigerant leaving the condenser of a refrigeration system is;
- a. Low pressure liquid.
  - b. Low pressure vapor.
  - c. High pressure liquid.
  - d. High pressure vapor.
18. Refrigerant entering the compressor of a refrigeration system is a;
- a. Liquid.
  - b. Sub-cooled liquid.
  - c. Sub-cooled vapor.
  - d. Superheated vapor.
19. Which process applies to cleaning refrigerant for immediate reuse by oil separation and single or multiple passes through devices, like replaceable core-driers, which reduce moisture and acidity?
- a. Recycling.
  - b. Recovering.
  - c. Reclaiming.
  - d. Restoring.
20. Which of the following leak detection methods is considered to be the most effective for locating the general area of a small leak?
- a. Standing vacuum test.
  - b. Electronic or ultrasonic tester.
  - c. Halide torch.
  - d. Audible sound.
21. Recovery during low ambient temperatures will;
- a. Shorten recovery time.
  - b. Slow the recovery process.
  - c. Minimize emissions.
  - d. Require frequent drier changes.
22. Factors affecting the speed of evacuation include;
- a. The size of the equipment being evacuated.
  - b. The ambient temperature.
  - c. The amount of moisture in the system.
  - d. All of the above.
23. One instance when personal protective equipment (gloves, safety glasses, safety shoes, etc.) should be worn is when;
- a. Reporting for work.
  - b. Handling and filling refrigerant cylinders.
  - c. Climbing ladders.

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- d. Lifting.
24. When pressurizing a refrigerant system with nitrogen what rule should you always follow?
- a. Charge nitrogen as a liquid.
  - b. Charge through a pressure regulator.
  - c. Pressurize to above 1000 pounds.
  - d. Never use nitrogen inside the system.
25. When transporting cylinders containing used refrigerant, DOT requires that you;
- a. Use OSHA-approved containers.
  - b. Attach DOT classification tags.
  - c. Ship by EPA certified carrier.
  - d. Do all of the above.

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## Core Answer Key:

1. A

2. C

3. B

4. D

5. A

6. C

7. A

8. D

9. D

10. D

11. A

12. D

13. B

14. D

15. B

16. C

17. C

18. B

19. A

20. C

21. B

22. D

23. B

24. B

25. D

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## Type II

1. What is the liquid line?
  - a. The line between the condenser and the metering device.
  - b. A line to close before charging the system.
  - c. The line that should be accessed using the red manifold tubing.
  - d. The line that should be accessed using the blue manifold tubing.
2. Many refrigeration units use an open compressor. Which part of the compressor is most likely to leak if a unit is not used for several months?
  - a. The suction service valve.
  - b. The rotating shaft seal.
  - c. The oil drain plug.
  - d. The discharge service valve.
3. EPA regulations require that all appliances containing more than 50 pounds of refrigerant (except for commercial and industrial process refrigeration) be repaired when the leak rate exceeds \_\_\_\_\_ percent of the charge per year.
  - a. 0
  - b. 15
  - c. 25
  - d. 35
4. In general, what is one routine maintenance task which must be performed on most refrigerant recycling machines?
  - a. Check compressor seals.
  - b. Change electrical fuses.
  - c. Change oil and filter.
  - d. Replace moisture sight glass.
5. You can save time recovering the refrigerant from a system by removing as much as possible in the \_\_\_\_\_ phase?
  - a. Final
  - b. Initial
  - c. Liquid
  - d. Vapor
6. Your recovery/recycling machine has R-502 refrigerant in it. You now have to recover refrigerant from a unit with R-22. What must be done before the R-22 refrigerant can be recovered / recycled?
  - a. Nothing, as long as the recovery machine is not full.
  - b. Change the expansion valve on the recovery machine.
  - c. Change the filter and expansion valve on the recovery machine.
  - d. Recover as much of the R-502 from the recovery unit as possible, change filter, and evacuate.
7. When an air-cooled condenser on the roof of a building and the evaporator on the first floor, recovery should first occur;

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- a. From the vapor line entering the condenser.
  - b. From the discharge of the compressor.
  - c. From the liquid line entering the evaporator.
  - d. On the suction side of the compressor.
8. Gauge set hoses used for field service work should have self-sealing connectors or hand valves in order to;
- a. Minimize the change of an explosion during refrigerant recovery.
  - b. Prevent venting during recycling.
  - c. Minimize refrigerant release when hoses are connected and disconnected.
  - d. Prevent vapor lock during liquid transfer.
9. Recycling or recovery equipment using hermetic compressors has the potential to overheat when drawing deep vacuums because;
- a. It runs faster than other equipment.
  - b. The motor relies on the flow of refrigerant through the compressor for cooling.
  - c. It has a higher compression ratio limit than other equipment.
  - d. The oils used in hermetic compressors burn at lower temperatures than the oils used in other equipment.
10. When using recovery and recycling equipment manufactured AFTER November 15, 1993, technicians must evacuate an appliance component containing MORE than 200 pounds of CFC-12 to the following level before making a major repair:
- a. 0 psig.
  - b. 4 inches of Hg vacuum.
  - c. 10 inches of Hg vacuum.
  - d. 15 inches of Hg vacuum.
11. After reaching the required vacuum on an appliance, you should;
- a. Immediately disconnect the recycling or recovery equipment and open the system or service.
  - b. Wait for at least a few minutes to see if the system pressure rises, indicating that there is still refrigerant in liquid form or in the oil.
  - c. Immediately break the vacuum with nitrogen and open the system for service.
  - d. Immediately pressurize the system with nitrogen and perform a leak check.
12. When using recovery and recycling equipment manufactured BEFORE November 15, 1993, technicians must evacuate an appliance containing 10 pounds of CFC-500 to the following level before disposing of the appliance:
- a. 0 psig
  - b. 4 inches of Hg vacuum.
  - c. 10 inches of Hg vacuum.
  - d. 15 inches of Hg vacuum.
13. Which of the following repairs would ALWAYS be considered "major" under EPA's regulations?
- a. Replacement of an evaporator coil.
  - b. Replacement of a filter-drier.
  - c. Replacement of a schraeder valve core.

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- d. Replacement of a condenser fan motor.
14. Appliances containing CFC refrigerants can be evacuated to atmospheric pressure when;
- a. The repair is major.
  - b. The repair is followed by an evacuation of the appliance to the environment.
  - c. Leaks in the appliance make evacuation to the prescribed level unattainable.
  - d. The appliance is being disposed.
15. You are changing out the compressor of a system containing 40 pounds R-502. Your recycling equipment was manufactured AFTER November 15, 1993. In addition to isolating the compressor as much as possible, which of the following procedures should you follow?
- a. Simply remove the compressor
  - b. Evacuate the isolated section of the system to atmospheric pressure, then remove the compressor.
  - c. Evacuate the isolated section of the system to 10 inches of vacuum and hold. If system pressure does not rise, remove the compressor.
  - d. Evacuate the isolated section of the system to 15 inches of vacuum and hold. If system pressure does not rise, remove the compressor.
16. Recovering refrigerant from a system in vapor phase will minimize loss of;
- a. Water.
  - b. Oil.
  - c. Refrigerant.
  - d. All of the above.
17. Which of the following statements is NOT true of recycling and recovery equipment manufactured AFTER November 15, 1993?
- a. It must be tested by an EPA-approved third party.
  - b. It must meet vacuum standards more stringent than those met by equipment manufactured before November 15, 1993.
  - c. It must be equipped with low-loss fittings.
  - d. It must have an oil separator.
18. You are going to service a residential split system, providing comfort air conditioning. You would expect to find what type of refrigerant.
- a. R-502
  - b. R-22
  - c. R-11
  - d. R-12
19. The state of the refrigerant leaving the receiver of a refrigeration system is;
- a. Low pressure liquid.
  - b. Low pressure vapor.
  - c. High pressure liquid.
  - d. High pressure vapor.
20. The reciprocating compressor should not be energized when;
- a. The discharge service valve is closed.
  - b. The suction service valve is open.

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- c. The discharge service valve is open.
  - d. There is demand for cooling.
21. Which of the following is an indicator of a leak in a high pressure system?
- a. High head pressure.
  - b. Low water temperature.
  - c. Excessive superheat.
  - d. Frequent purging.
22. The evaporation temperature of R-134a at 0 psig is;
- a. -21 degrees F
  - b. -15 degrees F
  - c. -5 degrees F
  - d. -1 degree F
23. Every refrigerating system shall be protected by;
- a. A pressure relief device.
  - b. A properly located stop valve.
  - c. A low pressure control.
  - d. A refrigerant receiver.
24. An operating unit that has a receiver / storage tank requires refrigerant system service. When servicing the unit;
- a. The compressor should be valved off.
  - b. Liquid should be recovered last.
  - c. Refrigerant should be recovered in the receiver.
  - d. A gauge pressure should be achieved by venting.
25. Refrigerant should be removed from the condenser outlet when;
- a. The condenser is below the receiver.
  - b. The condenser is on the roof.
  - c. The compressor is inoperative.
  - d. The evaporator has a small leak.

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## Type II Answer Key

1. A

2. B

3. B

4. C

5. C

6. D

7. C

8. C

9. B

10. C

11. B

12. B

13. A

14. C

15. C

16. C

17. D

18. B

19. C

20. A

21. C

22. B

23. A

24. C

25. A