SUMMIT
STUDY GUIDES

EPA 608

Universal Practice Test

Test 2

100 Questions • 25 per section

Universal: Core, Type I, Type II and Type III • Original practice questions

Written for the revised Section 608 question bank (from January 1, 2027) • Content current as of October 2026

Summit Study Guides
summitstudyguides.com

Copyright © 2026 Summit Study Guides. All rights reserved.

This practice material is licensed for the personal study use of the purchaser. No part of it may be copied, reproduced, shared, resold, uploaded to any website or file-sharing service, or used to train or build any product without prior written permission from Summit Study Guides. Brief quotations for review purposes are permitted with attribution.

Independence Notice

Summit Study Guides is an independent publisher and is not affiliated with, sponsored by or endorsed by the U.S. Environmental Protection Agency (EPA) or any EPA-approved certifying organization. "EPA 608" is used only to describe the exam this material prepares you for. The questions in this material are original practice items written to the Section 608 technician certification requirements (40 CFR Part 82, Subpart F); they are not actual exam questions and do not come from any certification exam. ASHRAE, AHRI, UL and other names are trademarks of their owners and are used for identification only.

Disclaimer

This material is provided for exam preparation and general education only. It is not legal advice and does not replace the regulations, manufacturer instructions, safety data sheets or hands-on training. Regulations, penalty amounts and industry standards change; confirm current requirements with EPA and your certifying organization. The content was reviewed for accuracy as of October 2026, but no warranty of any kind is made as to its completeness, accuracy or continued currency.

Using these practice questions does not guarantee that you will pass the Section 608 exam or any other examination. By using this material, you agree that Summit Study Guides and its authors are not liable for any loss, damage or outcome, direct or indirect, arising from its use, including from any errors, omissions or inaccuracies.

How to Use This Material

This test has 100 questions in the four sections of the Universal exam: Core, Type I, Type II and Type III, 25 questions each. Answer each question on your own first, choosing the single BEST answer. Each section is scored separately, and you need 18 of 25 (70%) to pass a section. Your certifying organization sets the time limit on exam day, so practice at a steady pace: about 30 minutes per section, or 2 hours for all 100 questions. Then check your work against the separate answer key, fill in the score sheet at the end of the key, and read every explanation, including for the questions you got right, because the reasoning is what transfers to new questions on exam day.

EPA 608 Universal Practice Test 2

100 questions • 4 sections of 25 • Answer key and explanations in the separate Answer Key file
Choose the single BEST answer for each question. Passing is 18 of 25 (70%) in each section. Suggested practice pace: about 30 minutes per section.

Section 1: Core Questions 1-25

1. A refrigerant has lower toxicity, an LFL above 0.10 kg/m³, and a maximum burning velocity of 6.7 cm/s. What is its safety group?

- **A.** A3
- **B.** A1
- **C.** A2L
- **D.** A2

2. An older electronic detector does not respond near a known leak on an R-1234yf system. What is the most likely reason?

- **A.** HFOs can be found only with a standing vacuum test
- **B.** R-1234yf leaks only when the system is off
- **C.** The detector is not designed to sense HFOs
- **D.** R-1234yf is lighter than air and rises away

3. A system is opened to replace a TXV. Which component should be replaced whenever a system is opened?

- **A.** Crankcase heater
- **B.** Suction accumulator
- **C.** Liquid receiver
- **D.** Liquid-line filter-drier

4. A scrap yard accepted a signed recovery statement with a load of dehumidifiers on May 12, 2025. What is the earliest date it may discard that statement?

- **A.** May 12, 2030
- **B.** May 12, 2028
- **C.** May 12, 2026
- **D.** It must be kept indefinitely

5. An R-410A system shows 419.4 psig on the high side (120°F saturation), and the liquid line measures 108°F. What is the subcooling?

- **A.** 20°F
- **B.** −12°F
- **C.** 12°F
- **D.** 108°F

6. R-410A has a GWP of 2,088. What does that mean?

- **A.** One pound traps 2,088 times the heat of 1 lb of R-11 over 100 years
- **B.** One pound stays in the atmosphere for 2,088 years
- **C.** One pound traps 2,088 times the heat of 1 lb of CO2 over 100 years
- **D.** One pound destroys 2,088 times the ozone of 1 lb of R-11

7. Table 1 requires recovery to 0 in. Hg on a 40 lb R-410A rooftop unit. What pressure does 0 in. Hg represent?

- **A.** About 14.7 in. Hg below atmospheric pressure
- **B.** A deep vacuum, the same as 25 mm Hg absolute
- **C.** A perfect vacuum, the same as 0 psia
- **D.** Atmospheric pressure, the same as 0 psig

8. A ducted split-system heat pump uses R-290. Its propane is not exempt from the venting prohibition. Why?

- **A.** R-290's listed AC end-use is self-contained room units only
- **B.** R-290 is exempt only in industrial process refrigeration
- **C.** R-290 is never exempt anywhere because it is an A3 refrigerant
- **D.** R-290 is exempt only in household refrigerators

9. In what year was the Kigali Amendment, which added an HFC phasedown to the Montreal Protocol, adopted?

- **A.** 2016
- **B.** 1992
- **C.** 2020
- **D.** 2010

10. An uncertified homeowner buys a new, fully assembled window air conditioner that comes charged with refrigerant. Does the sales restriction apply?

- **A.** Yes; the buyer must show a Type I certificate
- **B.** No; window units are exempt from all of the Section 608 rules
- **C.** No; refrigerant in a fully assembled appliance is excepted
- **D.** Yes; unless the charge is under 2 lb

11. Why must a compressor oil be miscible with the refrigerant in the system?

- **A.** So the oil absorbs moisture before it reaches the filter-drier
- **B.** So the oil travels with the refrigerant and returns to the compressor
- **C.** So the oil raises the refrigerant's boiling point in the evaporator
- **D.** So the oil keeps the refrigerant from fractionating during any leaks

12. Which refrigerant family contains chlorine, fluorine and carbon, but no hydrogen?

- **A.** CFC
- **B.** HCFO
- **C.** HCFC
- **D.** HFC

13. How should the lines between a vacuum pump and a system be sized?

- **A.** As short and large as possible, at least the pump inlet size
- **B.** As long as needed, with the smallest hose that fits
- **C.** Any length or diameter, as long as they have low-loss fittings
- **D.** Long and narrow, to keep oil from reaching the pump

14. On a standard gauge manifold, the blue hose and compound gauge connect to which part of the system?

- **A.** Compressor discharge line
- **B.** Low side (suction)
- **C.** High side (liquid line)
- **D.** Recovery machine

15. Under ASHRAE 15, what must a machinery-room refrigerant detector do when it reaches its set point?

- **A.** Automatically recover the refrigerant charge
- **B.** Shut off the room's lighting circuit
- **C.** Release nitrogen to dilute the refrigerant
- **D.** Actuate an alarm and mechanical ventilation

16. What is an ozone molecule made of?

- **A.** Two oxygen atoms
- **B.** Three oxygen atoms
- **C.** One oxygen and two chlorine atoms
- **D.** Two oxygen atoms and one nitrogen atom

17. A technician will open an R-11 centrifugal chiller for repair. Which certification type covers this?

- **A.** Type III
- **B.** Type II
- **C.** Core only
- **D.** Type I

18. Which of these refrigerants, if vented, adds chlorine to the stratosphere?

- **A.** R-404A
- **B.** R-744
- **C.** R-401A
- **D.** R-600a

19. Which method of charging R-404A into a system that is off is correct?

- **A.** Vapor weighed into the high side (liquid line)
- **B.** Vapor fed into the suction line until pressures match
- **C.** Liquid poured into the suction service valve unmetered
- **D.** Liquid weighed into the high side (liquid line)

20. An older manual says an R-22 office chiller must be repaired if it leaks more than 15% per year. What is the current threshold?

- **A.** 35%
- **B.** 10%
- **C.** 20%
- **D.** 15%

21. A property management company owns two office buildings. Its technician recovers R-410A from a rooftop unit at one building and wants to charge it into a unit at the other. What is required?

- **A.** It must first be reclaimed by an EPA-certified reclaimer to AHRI 700
- **B.** It must be returned to the original appliance only
- **C.** It must be recycled and tested to AHRI 700 first
- **D.** Nothing more; it may be reused in the same owner's equipment

22. A company commits two separate violations, and each continues for 3 days. Using the $124,426 maximum, what is the largest civil penalty EPA could seek?

- **A.** $124,426
- **B.** $248,852
- **C.** $373,278
- **D.** $746,556

23. A technician starts a recovery machine before opening the recovery cylinder valve. What is the likely result?

- **A.** Refrigerant bypasses to the vapor valve
- **B.** The machine recovers liquid more slowly
- **C.** The machine pulls a vacuum on the cylinder
- **D.** The machine trips its high-pressure cutout

24. A technician needs to push liquid out of an upright two-valve recovery cylinder. Which valve should be used?

- **A.** The pressure relief device on the valve assembly
- **B.** The vapor valve, after inverting the cylinder
- **C.** The liquid valve, whose tube reaches the bottom
- **D.** The vapor valve, after laying the cylinder down

25. How long must a refrigerant seller keep invoices showing the buyer's name, date of sale and quantity?

- **A.** 3 years
- **B.** 5 years
- **C.** 1 year
- **D.** Until the buyer's certification expires

Section 2: Type I: Small Appliances Questions 26-50

26. How is R-134a classified?

- **A.** A1 safety group, medium-pressure
- **B.** A1 safety group, high-pressure
- **C.** A2L safety group, medium-pressure
- **D.** A3 safety group, low-pressure

27. An uncertified apprentice recovers refrigerant from a refrigerator. When is this allowed?

- **A.** When a certified technician closely and continually supervises
- **B.** When the refrigerant is an HFC instead of a CFC
- **C.** When the apprentice has already passed the Core section
- **D.** When the supervisor reviews the work by phone afterward

28. A piercing valve was removed after recovery, leaving a hole in the process stub. What is the correct way to close it?

- **A.** Leave it open so the system can breathe
- **B.** Braze it per the manufacturer, with dry nitrogen flowing
- **C.** Braze it with refrigerant vapor in the line
- **D.** Seal it with tape until the next service call

29. A 1989 water cooler holds 6.2 oz of refrigerant and its compressor runs. With a machine made in 2011, the technician recovers 5.4 oz and the gauge reads 2 psig. May the cooler be opened?

- **A.** Yes; any small appliance needs only 80% recovered
- **B.** Yes; the cooler was built before 1993, so 80% applies
- **C.** No; it is about 87%, short of 90%, and not at 4 in. Hg
- **D.** Yes; reaching a positive gauge reading is enough

30. A retailer collects customers' old refrigerators. A contractor recovers the refrigerant at the retailer's loading dock. Whose name and address go on the signed statement?

- **A.** The retailer that collected the refrigerators
- **B.** The customer who owned each refrigerator
- **C.** The scrap yard that will process the units
- **D.** The contractor who recovered the refrigerant

31. A scrap yard buys a used recovery machine made in 2010 that has no certification label. May the yard use it to recover from refrigerators?

- **A.** Yes; small-appliance recovery work needs no certified recovery machine
- **B.** No; equipment made on or after Nov 15, 1993 must be certified
- **C.** Yes; certification is required only for service work
- **D.** Yes, as long as it reaches 4 in. Hg vacuum in use

32. Instead of recovering a percentage of the charge, a technician may meet the small-appliance rule by evacuating to which level?

- **A.** 4 in. Hg vacuum
- **B.** 0 psig
- **C.** 10 in. Hg vacuum
- **D.** 500 microns

33. An R-600a refrigerator has been off in an unheated garage at a steady 20°F. It reads about 3 psig. What does this show?

- **A.** Air has entered through a leak
- **B.** The refrigerant has been mixed
- **C.** The charge has mostly leaked out
- **D.** A normal reading for R-600a at 20°F

34. A metal recycler has a contract with a supplier stating that the supplier recovers refrigerant before delivery. A PTAC arrives from that supplier. What else does the rule require for this unit?

- **A.** A gauge reading logged by the recycler's staff
- **B.** A recovery record sent to EPA for this unit
- **C.** No separate statement; the contract covers it
- **D.** A separate signed statement for this unit

35. How many questions are in the Type I section of the Section 608 exam?

- **A.** 20
- **B.** 25
- **C.** 50
- **D.** 100

36. After passive recovery into a bag and a compressor change, the technician will evacuate the refrigerator before charging. What does the vacuum pump now do?

- **A.** It verifies that the 90% recovery level was actually reached
- **B.** It recovers the last of the refrigerant charge
- **C.** It pushes the bag's refrigerant back into the unit
- **D.** It removes air and moisture after recovery and repair

37. Which type of recovery equipment reaches the required level whether or not the appliance compressor runs, without special steps?

- **A.** A recovery bag used without a pump
- **B.** System-dependent equipment
- **C.** Self-contained equipment
- **D.** Equipment that relies on the appliance's own pressure

38. Is certified system-dependent equipment allowed on a small appliance whose compressor does not run?

- **A.** Yes, and the required level drops to 70%
- **B.** Yes, if it still reaches 80% or 4 in. Hg vacuum
- **C.** No, unless the appliance holds under 1 lb
- **D.** No, only self-contained equipment may be used on it

39. A recovery machine's label lists it for A1 and A2L refrigerants. The technician needs to recover R-290 from a self-contained display case. When may this machine be used?

- **A.** Only if the R-290 charge is under 150 g per circuit
- **B.** Only if its label also lists it for A3 refrigerants
- **C.** Always, because R-290 is a medium-pressure refrigerant
- **D.** Always, because an A2L listing covers all flammables

40. A 2024 window air conditioner with a working compressor is recovered with a device made in 1990. What is required?

- **A.** Recover 80% of the charge or reach 4 in. Hg vacuum
- **B.** Recover 80% of the charge or reach 10 in. Hg vacuum
- **C.** Recover 90% of the charge, because the appliance is new
- **D.** Recover 90% of the charge or reach 4 in. Hg vacuum

41. A self-contained window air conditioner uses R-290. Its charge is set by the room size it serves. Regardless of room size, the charge may never exceed:

- **A.** 5 lb (about 2,270 g)
- **B.** 150 g
- **C.** 300 g
- **D.** 1,000 g

42. A drinking water cooler is factory sealed with 6 oz of R-134a. Which certification is needed to recover its refrigerant?

- **A.** Type III
- **B.** None, because the charge is under 1 lb
- **C.** Type I
- **D.** Type II

43. A passive recovery kit includes a standard vacuum pump. Which condition makes using the pump permitted?

- **A.** Only when the receiving container is non-pressurized
- **B.** Only when the appliance compressor runs
- **C.** Only when the appliance holds an exempt refrigerant
- **D.** Only when the container is a pressurized cylinder

44. A technician reaches 4 in. Hg vacuum on a refrigerator, stops the machine, and five minutes later the gauge reads 1 in. Hg vacuum. What should the technician do?

- **A.** Open the system, because 4 in. Hg was already reached
- **B.** Add nitrogen to bring the system back up to atmospheric pressure
- **C.** Continue recovering, because refrigerant is still coming out
- **D.** Start the vacuum pump to finish removing the refrigerant

45. A refrigerator's nameplate charge is 16 oz. The compressor runs and the recovery machine was made in 2010. If the technician meets the rule by percentage, what is the least amount that must be recovered?

- **A.** 13.6 oz
- **B.** 14.4 oz
- **C.** 12.8 oz
- **D.** 15.2 oz

46. Two factory-sealed reach-in coolers are in a shop. Unit A holds 4.8 lb and unit B holds 5.2 lb. Which can a Type I-only technician service?

- **A.** Only unit A
- **B.** Only unit B
- **C.** Neither unit
- **D.** Both units

47. How does the regulation define self-contained recovery equipment?

- **A.** Equipment that relies on the appliance's own compressor to remove the refrigerant
- **B.** Equipment that removes refrigerant without help from the appliance's components
- **C.** Equipment that is permanently attached to one appliance
- **D.** Equipment that stores refrigerant only in a recovery bag

48. Before delivering window air conditioners to a recycler, a hauler cut out the compressors for their copper, and the charges escaped. The hauler offers a 'refrigerant leaked out' statement. Which statement is correct?

- **A.** The statement is valid if it also lists the hauler's full name and address
- **B.** The recycler may accept it if the hauler signs within 30 days
- **C.** The statement is valid because nothing is left in the units
- **D.** Cutting was a knowing release; no statement covers it

49. A technician uses a self-contained recovery machine with an oil-lubricated compressor every day. What should be checked daily?

- **A.** The machine's oil level and the machine for leaks
- **B.** The machine's certification label for a new test date
- **C.** The vacuum pump's exhaust filter for refrigerant
- **D.** The recovery tank's hydrostatic test stamp

50. A technician pressure tests a repaired refrigerator with nitrogen. Which setup is correct?

- **A.** No regulator, since small appliances hold little gas
- **B.** A regulator set to deliver the full cylinder pressure into the appliance
- **C.** A relief valve on the cylinder and no regulator needed
- **D.** A regulator on the cylinder and a relief valve in the downstream line

Section 3: Type II: High- and Medium-Pressure Appliances Questions 51-75

51. Why can a leak change the composition of the R-454B left in a system?

- **A.** Its sensor absorbs one of the components first
- **B.** Its R-32 reacts with POE oil at the leak site
- **C.** Its two components have different vapor pressures
- **D.** Its R-1234yf breaks down when exposed to room air

52. On an R-454B system, the PT chart at the measured suction pressure gives a bubble point of 38°F and a dew point of 40°F. The suction line is 52°F. What is the superheat?

- **A.** 13°F
- **B.** 14°F
- **C.** 12°F
- **D.** 2°F

53. A stationary system uses R-1234yf, which computes to about 148 psia at 104°F. What is its pressure class?

- **A.** Very high-pressure
- **B.** Low-pressure
- **C.** High-pressure
- **D.** Medium-pressure

54. A large R-22 leak has set off the refrigerant alarm in a basement machinery room. What should a technician without breathing equipment do?

- **A.** Enter low to the floor, where the air is freshest
- **B.** Stay out and let the ventilation run
- **C.** Enter quickly while holding breath to close valves
- **D.** Enter wearing a dust mask to filter the refrigerant

55. A detector bought years ago for R-22 work does not alarm at a known leak on an R-410A system. What should the technician check?

- **A.** Whether the leak has sealed itself since the call
- **B.** Whether the detector is listed for HFC refrigerants
- **C.** Whether R-22 can be added to the system as a tracer
- **D.** Whether the system pressure can go above its rating

56. How are A2L refrigerant cylinders, including A2L recovery cylinders, marked?

- **A.** A yellow top over a gray body
- **B.** A green band and a DOT 2.2 label
- **C.** A red band or top and a flammability pictogram
- **D.** A solid pink body under AHRI Guideline N

57. A shop replaces the compressor in its certified recovery machine with a different, non-approved model. What is the machine's status?

- **A.** It is certified because it was made after 1993
- **B.** It stays certified under its original label
- **C.** It is certified if it still reaches 0 psig
- **D.** It is uncertified until it is retested

58. Recovery equipment made or imported on or after which date must be certified?

- **A.** November 14, 1994
- **B.** November 15, 1993
- **C.** July 1, 1992
- **D.** January 1, 2018

59. An R-454B rooftop unit has a 250 lb full charge. A compressor will be replaced using a recovery machine made in 2020. What level is required before opening?

- **A.** 15 in. Hg vacuum
- **B.** 10 in. Hg vacuum
- **C.** 25 mm Hg absolute
- **D.** 0 in. Hg (0 psig)

60. After evacuation, an R-410A system is off and still in a vacuum. Which charging method is preferred?

- **A.** Start the compressor and add liquid to suction
- **B.** Add vapor into the low side with it running
- **C.** Add vapor to the high side until pressures equalize
- **D.** Weigh liquid into the high side (liquid line)

61. In push-pull liquid recovery, the recovery machine's outlet connects to:

- **A.** The appliance's vapor access port
- **B.** The recovery cylinder's vapor valve
- **C.** The recovery cylinder's liquid valve
- **D.** The appliance's liquid access port

62. Liquid recovery is planned on a system whose receiver sits below the condenser. Which connection point is best?

- **A.** From the receiver outlet
- **B.** From the discharge line
- **C.** From the suction line
- **D.** From the compressor crankcase

63. Which hose arrangement speeds evacuation of a split system?

- **A.** Long, small-diameter hoses to ease the load on the pump
- **B.** Standard hoses with the valve cores left in place
- **C.** A single long hose connected to the low side only
- **D.** Short, large-diameter hoses with valve cores removed

64. When do the Table 1 levels apply to a Type II appliance?

- **A.** Only before it is disposed of
- **B.** Only when its full charge is 50 lb or more of an ODS
- **C.** Before it is opened for service or before disposal
- **D.** Only after a leak has been repaired

65. An R-134a process chiller holds 320 lb. Its condenser will be replaced using a recovery machine made in 2021. What level is required?

- **A.** 25 mm Hg absolute
- **B.** 0 in. Hg
- **C.** 10 in. Hg vacuum
- **D.** 15 in. Hg vacuum

66. Why should the hoses be evacuated before they are opened to the system during recovery setup?

- **A.** So the machine's oil level can be checked
- **B.** So the refrigerant can warm up before it starts to move
- **C.** So air does not enter the recovery cylinder
- **D.** So the hoses meet the 3-year retest rule

67. A leaking flare fitting on a 150 lb R-22 rooftop unit is repaired without evacuating the unit. The initial verification test passes on May 3. By when must the follow-up verification test be done?

- **A.** By June 2, within 30 days of the initial test
- **B.** By May 13, within 10 days of the initial test
- **C.** By May 10, within 7 days of the initial test
- **D.** By May 3 of the following year, at inspection

68. A 40 lb R-410A unit will get either a compressor replacement (major) or a valve-core replacement (non-major, not followed by evacuation). The recovery machine was made in 2015. How do the pressures required before opening compare?

- **A.** The major repair needs a deeper vacuum than the other job
- **B.** The major repair needs 500 microns
- **C.** The non-major repair needs a deeper vacuum
- **D.** Both are atmospheric, since 0 in. Hg equals 0 psig

69. A technician finishes push-pull on a 500 lb R-22 rack and wants to open it right away. Why is this not allowed?

- **A.** Push-pull must be repeated three times before opening
- **B.** Push-pull requires a 24-hour standing test
- **C.** Push-pull alone does not reach the Table 1 level
- **D.** Push-pull leaves the system at 15 in. Hg

70. A DOT 4BW recovery cylinder's most recent requalification stamp reads 05/22. Using the 5-year requalification period, when is it next due?

- **A.** 05/25
- **B.** 05/27
- **C.** 05/32
- **D.** 05/23

71. After a liquid transfer, a hose full of liquid refrigerant is left with valves closed at both ends. What is the risk?

- **A.** The liquid expands as it warms and can burst the hose
- **B.** The liquid turns into non-condensable gas over time
- **C.** The low-loss fittings lose their seal after an hour
- **D.** The trapped liquid fractionates into its components

72. What is the maximum fill for a recovery cylinder, and what kind of limit is it?

- **A.** 80% of capacity by weight; an industry and manufacturer limit
- **B.** 90% of capacity by weight; a DOT regulation
- **C.** 80% of capacity by weight; an EPA regulation
- **D.** 80% of capacity by volume; a Section 608 regulation requirement

73. A test fluid's liquid-phase saturation pressure at 104°F reads 25 psig at sea level. How is an appliance using it classified?

- **A.** Low-pressure, serviced under Type II
- **B.** Medium-pressure, serviced under Type II
- **C.** High-pressure, serviced under Type II
- **D.** Low-pressure, serviced under Type III

74. Which statement about 500 microns is correct?

- **A.** It equals the 25 mm Hg absolute recovery level
- **B.** It is required by EPA before charging A2L units
- **C.** It is a common dehydration target, not an EPA rule
- **D.** It is the EPA level required before opening a unit

75. A shop manual lists four items as 'EPA requirements' for recovery work. Which one actually appears in §82.158?

- **A.** Hoses no longer than 6 feet
- **B.** Low-loss fittings on all hoses
- **C.** Cylinders filled to 80% by weight or less
- **D.** Schrader cores removed before recovery

Section 4: Type III: Low-Pressure Appliances Questions 76-100

76. The 85°F figure in the non-major repair rule for low-pressure appliances refers to what?

- **A.** The refrigerant's boiling point at atmospheric pressure
- **B.** The leaving chilled-water temperature
- **C.** The machine-room temperature during the repair
- **D.** The highest hot-water temperature allowed during heating

77. Which two low-pressure chiller refrigerants are in ASHRAE 34 toxicity class B?

- **A.** R-11 and R-1233zd(E)
- **B.** R-11 and R-123
- **C.** R-1233zd(E) and R-514A
- **D.** R-123 and R-514A

78. EPA's summary says nitrogen may not be used to raise low-pressure appliances to atmospheric pressure, with one exception. Which appliances are the exception?

- **A.** R-12 appliances
- **B.** R-113 appliances
- **C.** R-123 appliances
- **D.** R-11 appliances

79. For a non-major repair not followed by evacuation to the atmosphere, how does the requirement for a high-pressure appliance differ from that for a low-pressure appliance?

- **A.** High-pressure is evacuated to 10 in. Hg; low-pressure is pressurized to 0 psig
- **B.** High-pressure is evacuated to 0 psig; low-pressure is evacuated to 25 mm Hg
- **C.** High-pressure is evacuated down to 0 psig; low-pressure is pressurized up to 0 psig
- **D.** High-pressure is pressurized up to 0 psig; low-pressure is evacuated down to 0 psig

80. In Table 1, in what unit is the low-pressure appliance requirement stated?

- **A.** in. Hg vacuum
- **B.** mm Hg absolute
- **C.** psig
- **D.** microns

81. Which hose fittings must be used on a recovery unit's hoses during chiller recovery?

- **A.** Low-loss fittings
- **B.** Piercing access fittings
- **C.** Open-ended barbed fittings
- **D.** Flare fittings without valves

82. To about what temperature should a chiller's compressor oil be heated before it is drained?

- **A.** About 130°F
- **B.** About 175°F
- **C.** About 100°F
- **D.** About 85°F

83. A technician starts recovery on an R-123 chiller by pulling vapor from the top of the machine and never removes the liquid separately. What is the main drawback?

- **A.** Vapor recovery pulls more oil out than liquid recovery
- **B.** The job takes far longer than removing the liquid first
- **C.** The water-cooled recovery condenser cannot handle vapor
- **D.** The chiller can then never reach 25 mm Hg absolute

84. A technician lists four chiller parts. Which one is on the water side, not the refrigerant side?

- **A.** The evaporator charging valve
- **B.** The water box drain valve
- **C.** The evaporator rupture disc
- **D.** The purge unit connection

85. Which situation calls for a self-contained breathing apparatus (SCBA)?

- **A.** Entering a machinery room during a large release
- **B.** Reading the purge unit's run-time counter
- **C.** Changing the oil on an R-11 chiller at 3 psig
- **D.** Connecting gauges to a chiller during routine service

86. Why is the hot water used to warm a chiller for a leak test kept controlled rather than as hot as possible?

- **A.** Overheating could push the shell past 10 psig
- **B.** The purge unit stops working above 80°F
- **C.** Hot water dissolves the tube coatings
- **D.** Water above 100°F would condense the refrigerant in the shell

87. An R-11 chiller needs a float switch replaced. This is a non-major repair and will not be followed by evacuation to the atmosphere. To what pressure must the chiller be brought before opening?

- **A.** No higher than 10 psig
- **B.** No higher than 5 psig
- **C.** 25 mm Hg absolute
- **D.** No higher than 0 psig

88. A packaged process chiller holds 40 lb of R-123 and was assembled and charged in the field. Which certification covers it?

- **A.** Type II, because it holds under 200 lb
- **B.** Type I, because it holds under 50 lb
- **C.** No certification, because it holds under 50 lb
- **D.** Type III, because R-123 is low-pressure

89. A small leak develops on the condenser shell of a running R-123 chiller. What happens at that leak?

- **A.** Air is drawn in, since every part of the chiller runs in a vacuum
- **B.** Nothing passes, since the condenser sits at 0 psig
- **C.** Water enters, since the condenser is below tower pressure
- **D.** Refrigerant vapor escapes, since the condenser is above 0 psig

90. Under the leak-repair rule for a 600 lb R-11 chiller, which duty belongs to the owner or operator rather than the service technician?

- **A.** Repairing the leak with certified tools
- **B.** Performing the required leak inspections
- **C.** Calculating the leak rate after additions
- **D.** Performing the verification tests

91. During recovery from an R-123 chiller, the shell reaches 25.9 in. Hg vacuum. What is the refrigerant's saturation temperature, and why does it matter?

- **A.** About 20°F, but only the hoses can freeze
- **B.** About 40°F, which is safely above the freezing point of water
- **C.** About 0°F, cold enough to freeze still water in the tubes
- **D.** About 32°F, right at the freezing point of water

92. An R-123 chiller serves a cold storage warehouse. Which leak-rate threshold applies?

- **A.** 20%
- **B.** 30%
- **C.** 10%
- **D.** 35%

93. A 600 lb R-11 comfort chiller uses the rolling-average method. 40 lb was added 200 days ago, a successful follow-up verification test was done 150 days ago, and 25 lb is added today. What is the leak rate?

- **A.** About 15.2%
- **B.** About 10.8%
- **C.** About 6.7%
- **D.** About 4.2%

94. Air leaks into the evaporator of a running chiller. Where does that air end up?

- **A.** In the chilled water, where it forms bubbles
- **B.** In the evaporator, where it collects at the bottom
- **C.** In the condenser, where it collects at the top
- **D.** In the compressor oil, where it stays dissolved

95. An evaporator tube cracks while an R-123 chiller is running. Which way does fluid move through the crack?

- **A.** Oil is drawn into the chilled water
- **B.** Neither moves, since both sides are balanced
- **C.** Water is drawn into the refrigerant shell
- **D.** Refrigerant is pushed into the chilled water

96. After a non-major repair, a technician proposes pushing the remaining R-123 out of a chiller with nitrogen to save time. How should this be treated?

- **A.** As acceptable for non-major repairs only
- **B.** As an approved recovery method
- **C.** As venting, which is prohibited
- **D.** As acceptable if kept under 10 psig

97. An owner wants automatic leak detection on a 1,200 lb R-11 chiller using a system that tracks refrigerant level rather than sensing it in the air. At what loss must the system alert?

- **A.** 50 lb
- **B.** 10 lb
- **C.** 120 lb
- **D.** 100 lb

98. Twelve days into a 30-day repair period, the owner evacuates an R-11 chiller to atmospheric pressure and shuts it down for the winter. What happens to the repair deadline?

- **A.** It resets to a fresh 30 days counted from the shutdown date
- **B.** It is suspended and restarts when refrigerant is added
- **C.** It is canceled, and no repair is ever required
- **D.** It keeps running and expires 18 days later

99. What is the purpose of a high-efficiency purge unit on a newer chiller?

- **A.** To run the purge more often so leaks show up sooner
- **B.** To raise head pressure for better heat rejection
- **C.** To keep refrigerant lost with the vented air small
- **D.** To strip oil out of the refrigerant charge as it runs

100. An idle R-123 chiller sits in a 70°F machine room, where its shell reads 6.5 in. Hg vacuum. What happens at a leak on the shell?

- **A.** Air and moisture are drawn in
- **B.** Liquid refrigerant drips out
- **C.** Refrigerant escapes slowly
- **D.** Nothing passes until the chiller starts