1. Reductions in stratospheric ozone levels lead to higher levels of _____ reaching the Earths surface.
    a. Infrared radiation
    b. Microwave radiation
    c. Ultraviolet radiation
    d. Visible light

2. UVB can have the following effects on life except _____.
    a. Nonmelanoma and malignant melanoma skin cancers in humans
    b. Cataracts in humans
    c. Increased plant production.
    d. Increased phytoplankton production

3. Which of the following has ozone depleting potential?
    a. CFC-12
    b. HFC-134a
    c. HFO-1234yf
    d. CO2 (R-744)

4. Which of the following has the lowest Global Warming Potential?
    a. CFC-12
    b. HFC-134a
    c. HFO-1234yf
    d. CO2 (R-744)

5. MVAC-like appliance include appliances using R22 refrigerant
    a. True
    b. False

6. It is a violation of federal law to sell containers of what type of refrigerant in quantities less than 20 lbs to anyone who is not properly trained and certified to operate approved refrigerant recycling equipment.
    a. Class I
    b. Class II
    c. Both Class I and Class II
    d. Neither Class I or Class II

7. According to SAE J1991 the minimum levels of contaminant in Recycled CFC-12 (R-12) shall not exceed
    a. Moisture: 15 ppm by weight
    b. Refrigerant Oil: 4000ppm by weight
    c. Noncondensable Gases (Air): 300ppm by weight
    d. All of the above

8. Storage containers for recycled refrigerants should be
    a. SAEapproved
    b. DOT CFR Title 49 approved
    c. UL approved.
    d. Both b and c.

9. During operation the equipment shall provide overfill protection to assure the storage container, internal or external, liquid fill does not exceed ____ of the tanks rated volume at 21.1C (70F) per DOT Standards
    a. 50%
    b. 80%
    c. 100%
    d. 120%

10. Service hoses must have shut off devices located within 30cm (12in) of the connection point to the system being serviced to minimize introduction of noncondensable gases into the recovery equipment and the release of the refrigerant when being disconnected.
    a. True
    b. False

11. CFC-12 trapped in service hoses and gauges
    a. May be vented
    b. Is of no concern
    c. Must be recovered
    d. Is contaminated

12. Empty/near empty containers should be reclaimed, reduced to a vacuum, and
    a. Painted green
    b. Labeled hazardous
    c. Marked empty and ready for disposal
    d. Trucked only by a hazardous waste handler

13. Equipment for handling of refrigerant, should have notices related to the safe operation o9f the equipment prominently displayed on the equipment the label _____ shall be located on the front near the controls.
    a. CAUTION – SHOULD BE OPERATED BY CERTIFIED PERSONNEL
    b. CAUTION – PLUG INTO 240 VOLT RECEPTACLE
    c. CAUTION – TOXIC VAPORS
    d. None of the above

14. Equipment must be certified to meet standards by
    a. Underwriters Laboratories
    b. An equivalent certifiying laboratory
    c. The US EPA
    d. Either a or b

15. The fraction of non-condensable gases (air) in the gaseous phase in recycled refrigerant is to be measured by
    a. ultraviolet light
    b. gravimetric method
    c. gas chromatography
    d. Karl Fischer method

16. Tank assemblies shall be marked to indicate that retesting must be done every
    a. year
    b. 5 years
    c. 10 years
    d. Assemblies need not be retested.

17. HFC-134a refrigerant recycled to SAE-J2099standards must not exceed the following levels of contamination
    a. Moisture: 50 ppm
    b. Lubricant: 500ppm
    c. Non-condensable Gases:150 ppm
    d. All of the above

18. Automotive refrigerant recycling equipment intended for use with both CFC-12 and HFC-134a must provide means to prevent recovery from both a CFC-12 and HFC-134a mobile air conditioning system concurrently
    a. True
    b. False

19. Portable refillable containers used to recover refrigerant must be
    a. Green with a blue top
    b. Grey with a yellow top
    c. Blue with a green top.
    d. Yellow with a grey top

20. Upon being refrigerant recoverey, they must be marked in black print at least 20mm high "DIRTY [name of refrigerant] – DO NOT USE, MUST BE PROCESSED
    a. True
    b. False

21. EPA reviews putative substitutes for CFC-12 under the
    a. SNAP program
    b. CRACKLE program
    c. POP program
    d. None of the above

22. Which the following has been approved as acceptable substitute for CFC-12?
    a. HFC-134a
    b. HFO-1234yf
    c. R-744
    d. All of the above.

23. A hose marked J2064 means that it has been coupled, tested , and has met the requirements of SAE J2064 for
    a. R22
    b. R-134a
    c. R-744
    d. R-1234yf

24. The maximum working pressure on the high-pressure side of a R-134a MVAC system is 4.14 MPa. The maximum pressure on the low pressure side is
    a. 0 MPa
    b. 1.38 MPa
    c. 4.14 MPa
    d. 6.78 MPa

25. The maximum working pressure on the high pressure side of an R-1234yf MVAC system is 4.14 MPa. The maximum pressure on the low pressure side is
    a. 0 MPa.
    b. 1.46MPa
    c. 4.14 MPa
    d. 10.43MPa

26. The maximum working pressure on the high pressure side of a R-744 MVAC system is 17 MPa. The maximum working pressure on the low side is
    a. 0 MPa
    b. 13 MPa
    c. 17 MPa
    d. 20 MPa

27. MVAC systems using R-134a, R-152a or R-1234yf shall have a tethered service fitting cap with an O-ring seal for the purpose of
    a. Minimizing dirt/dust from entering the service fitting.
    b. Keeping the lubricant from leaking out
    c. Keeping the refrigerant for escaping under high pressure
    d. There is no need for a service fitting cap.

28. The durable refrigerant label shall be mounted
    a. Under the compressor
    b. On the door
    c. In a clearly visible location under the hood.
    d. On the engine block

29. The symbolic refrigerant label has a snowflake. Next to it is the
    a. The type of refrigerant
    b. The type of lubricant
    c. The manufacturer of the condenser
    d. The words ‘CAUTION SYSTEM CONTAINS REFRIGENT UNDER HIGH PRESSURE

30. The fitting size and thread directionfor the High Service Port for refrigerant HFC-134a is
    a. 7/16 Right Turn
    b. 7/16 Left Turn
    c. 10/16 Left Turn
    d. Quick Connect

31. Refrigerant R-134a must be identified when added to a system by a label with the color
    a. Cherry Red
    b. Burnt Orange
    c. Light Green
    d. Sky Blue

32. Topping of a leaking A/C system without making an attempt to repair the system is in violation of EPA regulations
    a. True
    b. False
33. While electronic leak detectors can sense a leak as small as 4 to 14 g/yr (0.15 to0.5 oz/yr) liquid bubble leak detection rates of 1 bubble per second would be caused by leaks equal to double or triple the system capacity.
    a. True
    b. False

34. The following is an acceptable drop in replacement for R-134a
    a. R-12
    b. R-1234yf
    c. R-744
    d. There is no drop-in replacement for any refrigerant.

35. The R-1234yf tank is
    a. White with orange flames to denote flammability
    b. Grey with orange flames to denote flammability
    c. White with a red band to denote flammability
    d. Red with a white band to denote flammability

36. The R-744 tank is
    a. Green with a blue band to denote toxicity
    b. Grey with orange band to denote toxicity
    c. Grey
    d. Orange

37. When recharging a system to the amount specified by the manufactured the tolerance is
    a. 0.5 grams
    b. 1.0 ounces
    c. 15 grams
    d. 1.0 pounds

38. An incorrect system charge can result in
    a. Inadequate charge of the system resulting in decreased cooling capacity
    b. Overcharge of the system resulting in damage to the compressor
    c. Overcharge of the system, resulting in release of refrigerant via the blow back valve
    d. All of the above.

39. To convert ounces to pounds
    a. Multiply the number of ounces by 16
    b. Multiply the number of ounces by 0.0220
    c. Divide the number of ounces by 16
    d. Divide the number of Ounces by 35.2

40. The equipment manufacture must provide a method or service to check the accuracy of the recharging system.
    a. True
    b. False