

PDH Academy

Final Exam Continuing Education Course #055 The Energy Audit of an Existing Home

1. The proportion of the world's energy supply used by the USA is:
 - a. 10%
 - b. 15%
 - c. 25%
 - d. 30%
2. The primary cause of wasted home energy is:
 - a. Vampire power
 - b. Air leakage
 - c. Inefficient fossil fuels
 - d. Electricity rates
3. Which of the following is not a restriction for conducting a Blower Door Test?
 - a. Light Household Dust
 - b. Asbestos
 - c. Peeling lead paint
 - d. Mold
4. The average R value through 2000 sq. ft. of wall assembly with no fenestration that loses 5000 BTU/hr for 70° F inside and 20° F outside is:
 - a. 10
 - b. 12
 - c. 20
 - d. 25
5. How many BTU/hr are lost through air leakage for the above example of Δ Temp., if the air flow rate per hour is 1200 cubic feet?
 - a. 1300
 - b. 960
 - c. 1000
 - d. 1080
6. The Building Performance Institute, Inc. certifies Building Analysts who:
 - a. Have one year experience auditing homes
 - b. Pass the written and field examinations
 - c. Earn a two year associates degree
 - d. All of the above
7. MSDS are on the job for which materials?

- a. Fog used in ducts
- b. Smoke generators
- c. Caulk
- d. All of the above

8. If the Leakator detects gas escaping at an elbow, use which of the following to pin point it?

- a. Bubble solution
- b. Smoke
- c. CO Detector
- d. Digital Manometer

9. A flexible gas line in good condition must be replaced if it was manufactured in which year?

- a. 1970
- b. 1975
- c. 1980
- d. None of the above

10. Combustion Appliance Zone (CAZ) to be tested include:

- a. Gas fired furnace
- b. Electric hot water heater
- c. Geothermal heat pump
- d. Steam radiator

11. Discontinue testing if your CO detector reads the following in the air you are breathing:

- a. 5 ppm
- b. 10 ppm
- c. 15 ppm
- d. None of the above

12. Achieving CAZ worst case depressurization can be helped by:

- a. Turning off bathroom vents
- b. Running the washing machine
- c. Running the clothes drier vented outside
- d. Opening front and rear doors

13. The BPI minimum draft pressure within a flue vent is -1.0 pascals. What is the outdoor temperature?

- a. 40° F
- b. 50° F
- c. 60° F
- d. 70° F

14. Spillage within the first minute of turning on a combustion appliance can be observed with:

- a. A smoke generator
- b. A mirror
- c. A CO detector
- d. Items a. and b. above

15. A 1" thick Extruded Polystyrene Rigid Board has R value of:

- a. 3
- b. 5

- c. 7
- d. 10

16. Darcy's Law:

- a. $Q = K A / i$
- b. $Q = K A^2 i$
- c. $Q = K A i$
- d. $Q = K A i^2$

17. A comfortable relative humidity in summer time:

- a. 75
- b. 70
- c. 65
- d. 55

18. Which vapor barrier advice is incorrect?

- a. Use a vapor retarder instead of a barrier where feasible.
- b. For A.C. buildings, do not place even a retarder on the inside.
- c. Double up barriers on both sides of a ceiling.
- d. Ventilate properly to control humidity.

19. The region above which warm air is escaping from a home is the:

- a. Stack plane
- b. Neutral pressure plane
- c. Duct pressure plane
- d. Leeward side plane

20. The Blower Door Test is conducted at what water column equivalent?

- a. -25 pascals = 1/10"
- b. -31 pascals = 1/8"
- c. -50 pascals = 1/5"
- d. -62 pascals = 1/4"

21. Which item is not part of a Blower Door Test?

- a. Digital Manometer
- b. CO detector
- c. Flow Rings
- d. Shroud

22. Continuous Mechanical Ventilation must be installed in a tight house if CFM50 is what percent of the BAS?

- a. 65
- b. 75
- c. 85
- d. None of the above

23. Kyle is paid \$800 to reduce a CFM50 = 2500 house to this flow, at 65 cents per CFM50.

- a. The BAS
- b. 1150
- c. 1269
- d. 1342

24. Ways to identify targeted air leaks during a Blower Door Test:

- a. Infrared camera
- b. Smoke generator
- c. Sense of touch
- d. All of the above

25. If all lighting in a home were converted to CFLs that average 70% less electrical cost than incandescent, a \$100 monthly bill would drop to how much?

- a. \$74
- b. \$86
- c. \$92
- d. \$94

26. Hot water should be set at:

- a. 120° F
- b. 130° F
- c. 140° F
- d. 150° F

27. A two ton air handler should send conditioned air through ducts at:

- a. 450 cfm
- b. 500 cfm
- c. 550 cfm
- d. 650 cfm

28. The SIR for a \$1000 air sealing that saves \$175 per year in heating and AC costs, over a 30 year life span is:

- a. 2.0
- b. 4.5
- c. 5.25
- d. 6.5

29. The current Federal Tax Credit for residential geothermal or solar energy investments is:

- a. 26%
- b. 25%
- c. 20%
- d. 10%

30. A good way Energy Auditors remember to return all settings to their initial condition is:

- a. Ask the homeowner for a reminder
- b. Have a written notation on the check list form.
- c. Leave keys near the CAZ
- d. None of the above.