edcetera Architects

DESIGNING FOR ENERGY EFFICIENCY

FINAL EXAM

1. Cool roofs are best described as _____ .
   a. Those incorporating a misting system on the surface
   b. Those encouraging societal trendsetters to occupy the building
   c. Those with at least double the minimum recommended insulation below them
   d. Those surfaced with light or reflective materials

2. When heat moves through an object in an assembly, that is more conductive than materials around it, that is described as _____ .
   a. An end around
   b. A thermal bridge
   c. Conducive transfer
   d. A complete design fail

3. If heating and cooling loads for a region are roughly balanced, some choose to _____ .
   a. Omit a vapor barrier altogether
   b. Maximize fenestration to encourage natural ventilation
   c. Use dark roofing to control solar gain
   d. Depend on exterior stucco for waterproofing

4. The ultimate goal of venting is to allow _____ and _____ levels in an attic to equalize with those same conditions outdoors.
   a. Wildlife, moisture
   b. Temperature, air pressure
   c. Moisture, barometric pressure
   d. Temperature, humidity

5. When melting snow above warm attics, flows down to freeze on eaves, it creates _____ .
   a. An ice dam
   b. A sheet of running water needed diverted
   c. Potential ice hazards down below on paved surfaces
   d. An instant thermal bridge

6. Block core filling with any type of insulation, offers little in savings because _____ .
   a. Its very difficult to put in place after the block has been laid
   b. To maintain flexibility, core insulation must be kept very thin
   c. It is only made in two locations and the high shipping costs are difficult to recoup
   d. The many block webs still conduct heat as thermal bridges

7. The type of energy that travels away from surfaces and heats anything solid that absorbs energy is called _____ .
   a. Radiant heat
   b. The microwave spectrum
   c. Radon
   d. Ultraviolet (UV) energy

8. The two types of foam insulation, closed-cell and open-cell, are both made from _____ .
   a. Polyicystyrene
   b. Recycled materials
   c. Polyurethane
   d. Fiberglass

9. _____ typically forms the core of structural insulated panels.
   a. Powerful adhesives
   b. Structural sheathing panels
   c. T-studs at a spacing of 16”
   d. Foam board insulation

10. Air leakage can account for _____ % or more of a home’s energy costs.
    a. 25
    b. 30
    c. 35
    d. 80

11. When inside air pressure is less than pressure outside, air is pulled into the building by the process of _____ .
    a. Infiltration
    b. Exfiltration
    c. Transpiration
    d. Migration

12. The windows that leak the most air tend to be those where operable pieces _____ .
    a. Are made of solid material
    b. Do not rest against the frame when closed
    c. Slide in a track unless locked
    d. Do not come together in a tongue and joint

13. **Windows collecting** solar energy should face within ____ degrees of south.
    a. 28
    b. 30
    c. 35
    d. 5

14. _____ is a systematic way to promote water conservation, primarily in arid regions.
    a. Parsimony
    b. Xeriscaping
    c. Slow-drip irrigation
    d. Selective landscaping

15. A good rule of thumb is to provide enough glazing to equal ____% of the conditioned square footage.
    a. 12
    b. 20
    c. 7
    d. 5

16. Ground below the frost line is almost always a constant temperature of _____ degrees Fahrenheit.
    a. 40-46
    b. 4-6
    c. 33
    d. 15-40

17. _____ can be elevated in earth-sheltered houses.
    a. Summer humidity levels
    b. Plumbing lines
    c. Solar heat gain
    d. Rodent populations

18. ___ is the anachronym used to describe an air system component typically involving two primary aspects, mechanical ventilation and heat recovery.
    a. HVAC
    b. MVHR
    c. HEPA
    d. VFAE