

40 Multiple Choice Questions – Select the best answer for each one.

New Questions

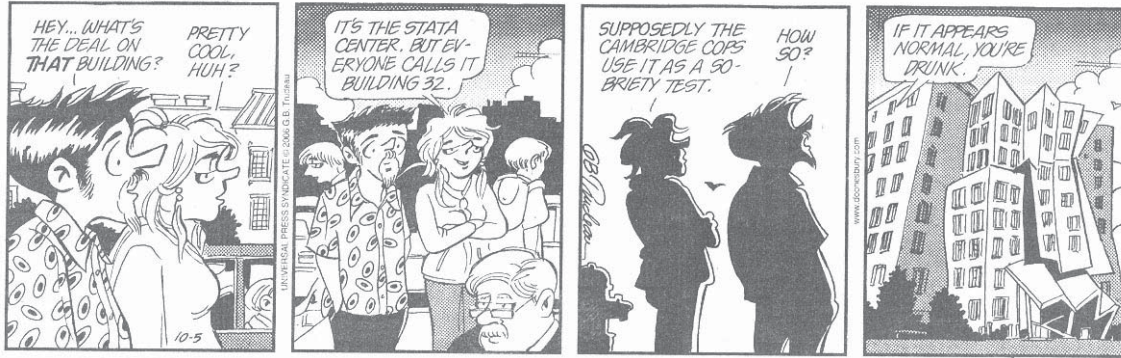
1. If you specify a heating system for a building that has a COP of 100%,
 - A. you know that it's the best possible system
 - B. you know that there are better alternatives
 - C. you're not sure of its second law efficiency
 - D. a COP of 100% is impossible
2. Over the life of a multi-story office building you can achieve the best cost benefit by
 - A. reducing energy use by 50%
 - B. increasing worker productivity by 5%
 - C. reducing cost of construction by 25%
 - D. reducing maintenance costs by 15%
3. A way for a design firm to assure that their new green buildings have an economical first cost is to
 - A. employ an integrated design process
 - B. have previous experience in designing green buildings
 - C. consider the use of structural materials as unadorned finish materials
 - D. all of the above
4. The benefit of a green building can be measured in
 - A. lower energy bills
 - B. higher resale value
 - C. decreased absenteeism
 - D. all of the above
5. You are standing ten feet from an electric forklift, producing a noise of 3 dB. When you move to twenty feet away, you'll hear
 - A. nothing
 - B. 0 dB of noise
 - C. -3 dB of noise
 - D. 3 dB of noise



6. You're most likely to perceive a room as being acoustically dead when
- A. the room is large and the absorption is high
 - B. the room is large and the absorption is low
 - C. the room is small and the absorption is high
 - D. the room is small and the absorption is low
7. Freeway Park over I-5 in Seattle is considered an urban haven because
- A. it is extremely quiet
 - B. its concrete structure blocks freeway noise
 - C. its structure blocks and its waterfall masks freeway noise
 - D. people like to watch the traffic jams below
8. The benefit of a coffered ceiling in a quiet goal space is
- A. diffuse reflection of sound
 - B. increased surface area for sound absorption
 - C. both of the above
 - D. none of the above
9. In an outdoor environment a noise problem can be attenuated by
- A. increasing the distance from source to receiver
 - B. planting a wide swath of trees and bushes between source and receiver
 - C. constructing a tall concrete block wall near the source
 - D. all of the above
10. Structure borne sound from an elevator can be reduced by
- A. using acoustically absorptive materials inside the cabin
 - B. using spring mounts to isolate the motor from the building
 - C. using solid concrete walls to enclose the shaft
 - D. all of the above
11. A problem with using convex ceilings in a room is
- A. focusing
 - B. creep
 - C. flutter echoes
 - D. none of the above
12. An effective sound barrier between adjacent rooms with NCs of 20dB and 50dB should have an STC of at least
- A. 12
 - B. 24
 - C. 36
 - D. 48

13. An impulse response diagram shows
- A. the time of arrival of direct and reflected sound
 - B. the intensity of direct and reflected sound
 - C. an indication of the liveliness of the space
 - D. all of the above
14. In a small space with acoustically reflective parallel walls you will experience
- A. flutter echo
 - B. focused sound
 - C. creep
 - D. none of the above
15. If you use a sound source that employs frequencies five times those of speech, you should make your physical acoustic model of a lecture hall
- A. at full scale
 - B. at 2:1
 - C. at 5:1
 - D. at 10:1
16. The acoustic modeling procedure that makes use of ray tracing is
- A. graphic
 - B. physical models with a laser pointer as surrogate for a sound source
 - C. computer-based models
 - D. all of the above
17. A concert hall with planar, unornamented, reflective walls and ceiling could be effective for orchestral performances if it were
- A. a shoebox configuration
 - B. a wide hall
 - C. a surround hall
 - D. none of the above
18. An acoustic problem in Carnegie Hall is
- A. some balconies that are deeper than their openings' height
 - B. a non-resonant concrete slab beneath the stage
 - C. duct work that produces fast-moving noisy air
 - D. all of the above
19. An undersized (by volume) concert hall like the one in Eugene can achieve satisfactory acoustic performance for the audience by
- A. using wall panels that can switch from absorptive to reflective
 - B. using movable walls or ceilings to reduce the volume of the space
 - C. using electronic means to add early reflections and extend reverberation time
 - D. all of the above

DOONESBURY



20. Frank Gehry was the design architect for
- A. Walt Disney Concert Hall in Los Angeles
 - B. Millennium Park bandshell in Chicago
 - C. an incarnation of the Hollywood Bowl
 - D. all of the above

Review Questions

21. Effective daylighting is linked to sustainability because
- A. it's energy-efficient
 - B. it produces no carbon-laden emissions
 - C. it enhances health and productivity
 - D. all of the above
22. An indirect electric lighting scheme is most efficient in a
- A. daylighted room
 - B. room with a high IRC
 - C. room with a low IRC
 - D. none of the above
23. When observed from 10 feet away a 100 candela source would have a luminous intensity of
- A. 1 candlepower
 - B. 10 candlepower
 - C. 100 candlepower
 - D. 1 foot candle
24. Alder and Sullivan's Wainwright Building in St. Louis is adequately daylighted because
- A. it has an atrium
 - B. all offices have windows
 - C. it has lightshelves
 - D. all of the above

25. To daylight a high bay warehouse of 20,000 square feet, you'd use no more than
- A. 20 5'x10' skylights
 - B. 50 5'x10' skylights
 - C. 100 5'x10' skylights
 - D. 200 5'x10' skylights
26. The best place to test a physical daylighting model is
- A. under the natural sky at the building site
 - B. in an artificial sky
 - C. either A or B above
 - D. none of the above
27. Incandescent lamps
- A. are so inefficient that they will soon be illegal in Europe and California
 - B. have a near perfect CRI
 - C. cost more to buy and operate over a ten year span than replacement CFLs
 - D. all of the above
28. The heavier of two CFLs will
- A. provide more illumination
 - B. have an electronic ballast
 - C. cause visible flicker, especially as it ages
 - D. all of the above
29. Seasonal Affect Disorder (SAD) can be treated
- A. by daily exposure to full-spectrum light
 - B. by short bursts of intense blue light after lunch
 - C. by the non-visual characteristics of melatonin-surpressing lamps
 - D. all of the above
30. If you use the line-source method to calculate illumination on a desktop from two eight-foot strips of fluorescent tubes in an off-white, 20'x20' classroom, you'd
- A. over-estimate the illumination
 - B. be accurate
 - C. under-estimate the illumination
 - D. have used the wrong method
31. Global warming will cause water supply
- A. to become more plentiful
 - B. to become more problematic
 - C. to become less plentiful
 - D. to stay about the same

32. Storm water collected in a cistern from a green roof can be used unfiltered as

- A. potable drinking water
- B. recycled water for gray water producers
- C. flushing water for toilets
- D. all of the above

33. Green roofs are an appropriate design strategy in Portland and Seattle because

- A. they help control storm water run-off
- B. they insulate roofs from heat loss
- C. they intensify the building's microclimate
- D. all of the above



34. Most of the storm water run-off from the Sweet Avenue restoration project parking lot adjacent to Paradise Creek

- A. goes directly into the creek
- B. is held in retention ponds that eventually drain into the creek
- C. is treated by cattails in bioswales and/or percolated into the earth
- D. is used to irrigate the landscape surrounding the lot

35. You can legally save water in a new slab-on-grade home by specifying

- A. a low-flush toilet
- B. an ultra low-flush toilet
- C. a Clivus Multrum composting toilet
- D. any of the above

36. The 1987 Brundtland Report, "Our Common Future," defined sustainability as

- A. "development that meets the needs of the present without compromising the ability of future generations to meet their own needs."
- B. a three-legged stool of economic, environmental, and cultural sustainability
- C. a necessary first step toward regenerative design to heal the planet
- D. all of the above

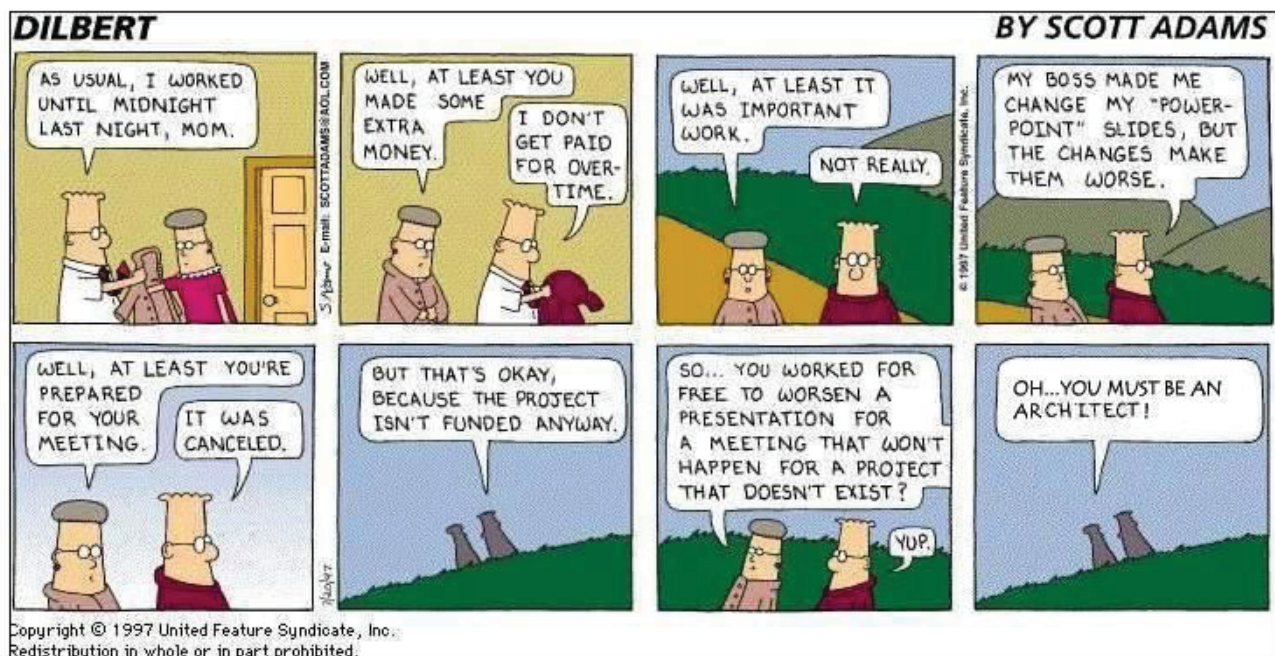
37. The least cost carbon emissions reducing measures are

- A. wise design choices for form, orientation, and enclosure details
- B. passive heating and cooling systems
- C. high-tech devices such as PVs and wind turbines
- D. all of the above

38. A LEED Gold building

- A. uses less energy than a similar built-to-code building
- B. is sustainable
- C. is regenerative
- D. all of the above

39. BedZED site generated energy features include
- A. PVs that produce electricity and hot water
 - B. a Central Heat and Power (CHP) system that produces electricity and hot water
 - C. wind cowls that generate electricity
 - D. all of the above
40. Fuel cells can be used to
- A. power transit vehicles
 - B. provide home heating, cooling, and electricity
 - C. generate heat and electricity from hydrogen fuel without pollution
 - D. all of the above



Catch some rays, catch some Zzzzzzzzzs!
 Come back with new energy next fall!