

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

New Questions (20)

1. The most constant and available source of site-generated energy is
 - A. the sun
 - B. the wind
 - C. running water (e.g., brook, stream, river)
 - D. none of the above is constant and available for all sites
2. The sadly demolished Eco-Sainsbury's in North Greenwich harvested site energies for
 - A. lighting
 - B. cooling
 - C. stormwater treatment
 - D. all of the above
3. Compared to 1960 U.S. energy use is now
 - A. much more efficient
 - B. more efficient
 - C. less efficient
 - D. much less efficient
4. A combustion fuel that causes no greenhouse gas emissions is
 - A. clean coal
 - B. natural gas
 - C. nuclear power
 - D. none of the above
5. The best possibility for a region to achieve a 100% renewable energy portfolio is
 - A. off-shore wind
 - B. photovoltaics
 - C. concentrated solar
 - D. a mix of all the above and more
6. The Audubon Society estimates the biggest killer of birds is probably
 - A. wind turbines
 - B. vehicle collisions
 - C. glass buildings
 - D. power lines and communications towers



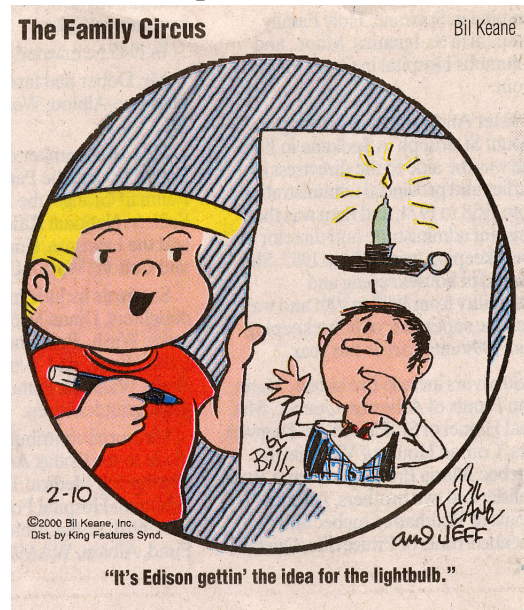
7. You hear a sound from a dinner bell that measures 5dBA. How much further from the bell can you roam and still be able to hear it?
- not one step further
 - not quite twice as far
 - twice as far
 - four times as far
8. When sound is absorbed its energy is converted to heat (watts/centimeter squared). In theory a loud noise like a firecracker could
- make a noticeable change in the absorber's surface temperature
 - melt the absorber
 - set fire to the absorber
 - none of the above
9. According to CBE POE surveys, the most frequently cited problem in green buildings is
- acoustics
 - thermal comfort
 - air quality
 - lighting
10. Providing acoustic shelter from the noise of an on-site or near-site linear sound source of over 80dB
- can be accomplished by a few well-placed trees
 - requires a 75dB masking sound
 - requires a solid acoustic barrier
 - all of the above
11. A deeply coffered wooden ceiling controls room acoustics by
- absorption
 - diffusion
 - more absorption than diffusion
 - more diffusion than absorption
12. Sound focusing from a dome can improve speech privacy by
- requiring only a whisper for speech to be understood
 - focusing sound on an inanimate object
 - diffusing ambient noise
 - none of the above
13. Isolation springs and hangers can be used to avoid transmitted noise on the scale of
- a machine
 - a ceiling
 - a room
 - all of the above



14. The type of room that is most likely to have a significant free field
- A. is a lively room for symphonic performance
 - B. is a classroom for elementary school
 - C. is a large dead space
 - D. a fast food restaurant
15. A reverberant space with an acoustic goal of silence would
- A. not meet its goal
 - B. seem acoustically chaotic
 - C. be good for musical performance
 - D. none of the above
16. To sound acoustically appropriate, a very large room requires
- A. more absorptive material than a smaller one
 - B. the same proportion of absorptive material as a smaller room
 - C. less absorptive material than a smaller one
 - D. none of the above
17. A 200 sqft wall with a 1ft by 2ft opening would have a maximum STC rating of
- A. 50dB
 - B. 40dB
 - C. 30dB
 - D. 20dB
18. An impulse response diagram shows
- A. potential echoes in a room
 - B. direct and reflected sound timing
 - C. direct and reflected sound magnitude
 - D. all of the above
19. A technique to accurately predict the quality of a planned auditorium from computer model is
- A. auralization
 - B. a small physical scale model
 - C. simple ray tracing
 - D. all of the above
20. Boettcher Hall and similar halls with vineyard seating that avoid electronic enhancement depend on
- A. reflective diffusing facades for each tier of seating
 - B. convex acoustic clouds
 - C. reverberant chambers beneath the stage
 - D. all of the above

Review Questions (20)

21. Weber's Law states that a perceived change in brightness
- A. is harder to obtain in a bright room
 - B. is harder to obtain in a dimly lighted room
 - C. is equally easy to attain no matter the room brightness
 - D. is on a linear scale
22. The luminous intensity of an intimate candle lighted dinner is expressed in
- A. candelas
 - B. foot candles
 - C. foot lamberts
 - D. satisfaction
23. A physical model of a daylighting scheme should be tested
- A. under a perfectly cloudy sky
 - B. in a overcast sky simulator (an artificial sky)
 - C. in direct sun
 - D. A or B and C above
24. The room that will likely mitigate glare has
- A. a high IRC
 - B. shaded apertures in two surfaces
 - C. deeply splayed apertures
 - D. any of the above
25. The most valuable aspect of Sefaira models of daylighting schemes is
- A. superbly accurate footcandle calculations
 - B. visualization of light in the space and in time
 - C. photorealistic renderings
 - D. all of the above
26. Architects designed successful daylighting schemes for office buildings
- A. until electric lighting was invented
 - B. until fluorescent lighting became commonplace
 - C. until the OPEC oil embargo
 - D. until triple glazing was widely available
27. Fluorescent lamps have the potential to last the longest in
- A. a totally undaylighted space
 - B. a space that requires no nighttime lighting
 - C. a marginally daylighted space
 - D. a well daylighted space



28. Incandescent lamps and 3 gal/flush toilets are banned in the U.S. and Europe because
- A. they are technologically out-dated
 - B. they are terribly inefficient
 - C. they are offensive to all users
 - D. all of the above
29. In a building with AC power CFLs and LEDs attain about the same efficacy because
- A. their technologies are similar
 - B. LEDs haven't reached their peak performance
 - C. energy is wasted in changing AC power to DC for the LEDs
 - D. none of the above
30. The most efficient way to electrically light the top floor of AAS for work performed at the desks is
- A. with the current direct lighting scheme at 7.5 feet above the floor
 - B. by replacing the direct fixtures with indirect fixtures that illuminate the ceiling
 - C. by replacing the direct fixtures with direct/indirect fixtures nearer the ceiling
 - D. by replacing the direct fixtures with diffusing fixtures in key locations
31. A type of light that has therapeutic value is
- A. full spectrum light
 - B. blue light
 - C. daylight
 - D. all of the above
32. The installation of low-flow toilets in new construction
- A. is a water conservation strategy
 - B. meets code
 - C. exceeds code
 - D. none of the above
33. An appropriate roofing material for maximizing the potential for high quality catchment is
- A. asphalt shingles
 - B. building integrated photovoltaics
 - C. both of the above
 - D. none of the above
34. A septic tank and leachfield black water treatment system is suitable for
- A. a large rural site
 - B. an ordinary suburban site
 - C. an urban site
 - D. all of the above

35. Waterless urinals in an urban building
- require no sewer connection
 - are considered low-flush toilets
 - exceed code requirements
 - all of the above
36. Municipal solid waste recycling in the US
- is not at maximum performance because over 50% of the regular solid waste is recyclable or compostable material
 - has increased significantly in volume since 1985
 - has increased significantly in percentage of total waste since 1985
 - all of the above
37. To greatly reduce carbon emissions buildings must be designed to
- be LEED Platinum
 - meet the Living Building Challenge
 - meet Architecture 2030's guidelines
 - none of the above
38. Life Cycle Cost analysis is accurate at predicting
- the value of alternative energy saving schemes over time
 - scarcities and shortages of energy resources
 - tax incentives
 - all of the above
39. An advertisement claims that a heat pump's efficiency is 300%, which is
- impossible
 - its First Law efficiency
 - its Second Law efficiency
 - none of the above
40. The deep lesson in the Environmental Control Systems course is
- high technology is sexy
 - good design is key to high performance
 - calculations are sexy
 - none of the above

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

