

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

New Questions (20)

1. Ken Haggard and Polly Cooper's Trout Farm home and office complex creates electricity from

- A. the sun
- B. the wind
- C. running water (e.g., brook, stream, river)
- D. the sun and running water

2. The wind cowls at BedZED are used

- A. to generate electricity
- B. for stack ventilation
- C. to provide ventilation air
- D. all of the above

3. Fuels that create greenhouse gasses are

- A. combustion fuels
- B. fossil fuels only
- C. biofuels only
- D. the most efficient and cost-effective

4. Fracking has increased the US supply of domestic natural gas and

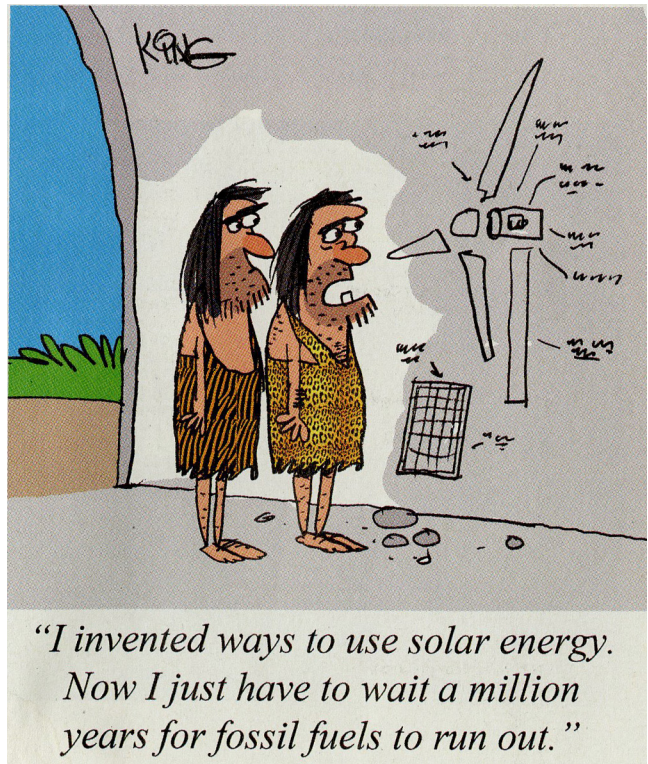
- A. has caused environmental pollution
- B. has reduced the US carbon footprint
- C. has used a great amount of water
- D. all of the above

5. The alternative energy source with the greatest potential for meeting our energy desires is

- A. solar
- B. wind
- C. hydro
- D. geothermal

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 noise from a freeway that measures 5 dBA. How much further from the freeway can you roam and still be able to hear it?

- A. just one step further
- B. not quite twice as far
- C. twice as far
- D. four times as far



8. Sound travels fastest through

- A. aluminum
- B. brick
- C. water
- D. air

9. Freeway Park, a quiet urban oasis in Seattle, mitigates freeway noise by

- A. blocking
- B. masking
- C. absorbing
- D. all of the above

10. Frank Lloyd Wright's intimate courtroom scheme created acoustic privacy for the judge's area by

- A. absorptive ceiling panels
- B. isolation caused by a reflective dome
- C. intensifying the background noise
- D. all of the above

11. Windows that can block site noises are

- A. laminated glass
- B. doubled paned
- C. triple paned
- D. any of the above

12. Spaces with an acoustic goal of silence
- require only a whisper for speech to be understood
 - have relatively long reverberation times
 - require background sound enhancement
 - none of the above
13. Ceiling planes can be designed to
- absorb sound
 - diffuse sound
 - focus sound
 - all of the above
14. The whispering gallery beneath the dome of St. Paul's Cathedral in London is made possible by
- focusing from the dome
 - flutter echoes
 - creep along the walls
 - all of the above

15. A wall assembly's STC indicates its ability to
- absorb sound
 - diffuse sound
 - block sound
 - none of the above



16. You can't make a 72 cu.ft. shower stall sound like a Gothic cathedral because
- its volume is too small
 - the surfaces are less reflective
 - the occupant is too absorptive
 - all of the above
17. The sound blocking effectiveness of a solid core wooden door can be compromised by
- a small hole in the door
 - lack of a threshold
 - lack of weather stripping
 - all of the above
18. Successful multipurpose auditoria adjust their acoustic properties by
- using electronic enhancement
 - adjusting their volume
 - using moveable wall panels
 - all of the above

19. The impulse response diagram for an outdoor venue like the Honolulu Bowl bandshell would feature

- A. a direct sound only
- B. a direct sound and a first order reflection
- C. a direct sound and may first order reflections
- D. a direct sound and reflections of many orders

20. The most effective way to model a proposed auditorium design is

- A. a laser pointer activated physical model
- B. a 10:1 scale model
- C. a computer-based ray tracing program
- D. auralization

Review Questions (20)

21. The Managua Cathedral by Legoretta in Nicaragua adapts to its climate and lighting environment by

- A. placing intense tasks near the windows
- B. providing apertures in at least two surfaces
- C. using operable apertures to adjust the daylight
- D. having skylights high in the space

22. Weber's Law could be used to gain understanding of all but

- A. eye sensitivity to visible light wavelengths
- B. light's color temperature
- C. the sensation of glare
- D. the perception of natural colors

23. Given a light source with a luminous intensity of 5 candelas

- A. its luminous flux would be 126 lumens
- B. the density of its luminous flux at 1 foot is 5 fc
- C. the luminance of a 50% reflective surface at 2 feet would be 2.5 fl
- D. all of the above

24. Rules-of-thumb have the most effect when employed during

- A. schematic design
- B. design development
- C. creation of a computer model
- D. none of the above

25. The most valuable aspect of Sefaira models of daylighting schemes is

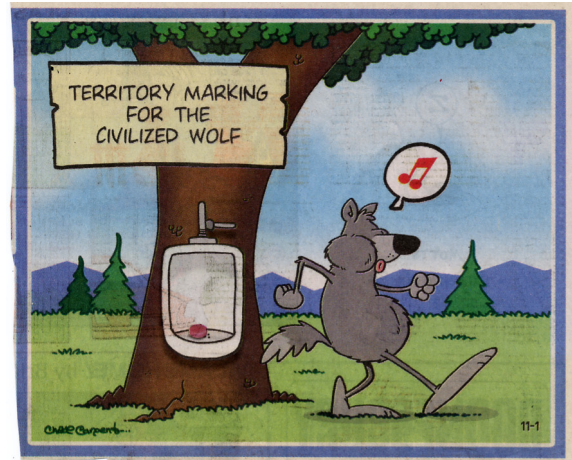
- A. superbly accurate footcandle calculations
- B. climate-based daylight performance prediction
- C. photorealistic renderings
- D. all of the above



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. Compared to a fluorescent lamp with color temperature 3400°K, one at 5000°K
- A. uses more energy
 - B. gives off more light
 - C. gives off cooler light
 - D. none of the above
28. Incandescent lamps 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, so
- A. lower cost CFLs are the best LCC choice
 - B. longer life LEDs are the best LCC choice
 - C. it's a toss up
 - D. A above if first cost is primary, B if life time cost is primary
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. Water scarcity in the Western US led to the innovative development of
- A. xeriscaping
 - B. cisterns
 - C. low-flush toilets
 - D. all of the above
32. The water use plan for the Eden Project in Cornwall
- A. identifies water sources and uses
 - B. mandates low-flush toilets
 - C. focuses on catchment and cisterns
 - D. all of the above
33. An appropriate strategy for maximizing the potential for high quality catchment is
- A. use of an initial runoff rejection system
 - B. use of metal roofing for the catchment area
 - C. use of filters before flow to the cistern
 - D. all of the above

34. A project that uses composting toilets is
- A. BedZED
 - B. the Bullitt Center
 - C. Druk White Lotus School
 - D. all of the above

35. Toilets that do not exceed code requirements are
- A. waterless urinals
 - B. low-flush toilets
 - C. dual-flush toilets
 - D. all of the above do



36. The strategy most responsible for mitigating flooding in the Paradise Creek restoration project was
- A. restoring beaver habitat
 - B. widening the creek bed and its benches
 - C. eliminating flow under Paradise Creek Street
 - D. all of the above

37. To greatly reduce carbon emissions buildings must be designed to
- A. be LEED Platinum
 - B. meet the Living Building Challenge
 - C. meet Architecture 2030's guidelines
 - D. none of the above

38. During the building process environmental quality can be protected by
- A. managing storm water
 - B. recycling construction wastes
 - C. sourcing local crews and materials
 - D. all of the above

39. The best case to make to an employer for designing a green building is
- A. energy savings
 - B. a prestigious LEED certification
 - C. increased productivity
 - D. building longevity

40. The deep lesson in the Environmental Control Systems course is
- A. high technology solves all environmental problems
 - B. good design is key to high performance
 - C. calculations are sexy
 - D. none of the above

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