

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

**New Questions (20)**

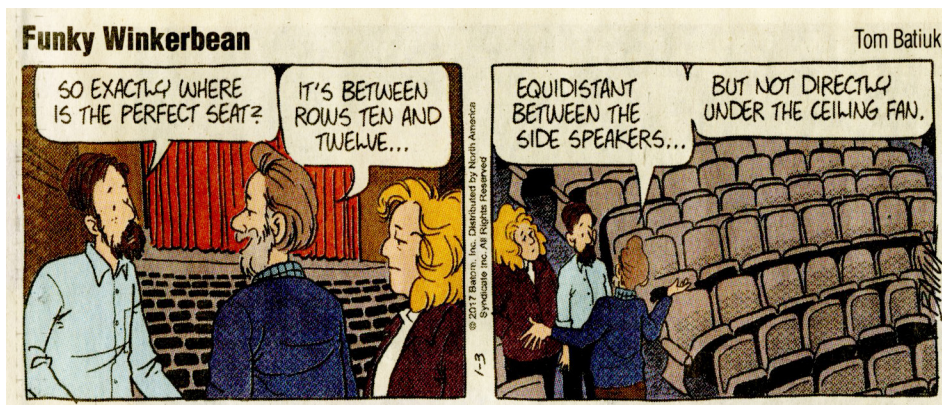
1. Which of the following is least feasible for generating electricity for a single family home
  - A. solar PV
  - B. solar thermal
  - C. micro-hydro
  - D. wind turbine
2. When site-generated electricity can be connected to the grid in a net metering scenario
  - A. batteries are not required
  - B. an inverter is required
  - C. high summer production can make up for low winter production
  - D. all of the above
3. Since 1999 total U.S. energy use has varied between 95 and 100 quads because of
  - A. a stagnant economy
  - B. great increases in efficiency
  - C. lower per capita use
  - D. all of the above
4. Fracking has increased the US supply of domestic natural gas and
  - A. has caused pollution of local water supply
  - B. has reduced the U.S. coal burning
  - C. has consumed a great amount of water
  - D. all of the above
5. Supporting increased coal production is problematic because
  - A. burning coal produces CO<sub>2</sub> pollution
  - B. there are 7x more U.S. jobs in wind and solar
  - C. popular opinion supports alternative energy
  - D. all of the above
6. Hydrogen fuel cells produce
  - A. heat
  - B. electricity
  - C. water
  - D. all of the above



7. High notes are thus named because they have
- high frequencies
  - high wave lengths
  - high volumes
  - none of the above
8. Wind and sound can be used together to
- play aeolian instruments
  - provide masking sound
  - carry sounds further in outdoor venues
  - all of the above
9. Which type of outdoor space most closely resembles free field acoustics?
- an urban street
  - a suburban parking lot
  - a Palouse wheat field
  - all of the above
10. The strategy used in the IIT Campus Center (by OMA) for mitigating the sound of the elevated train is
- absorption
  - barriers
  - masking
  - distance
11. Patrons seated in one of the concrete culverts at the Blue Moon Brewing Co. in Denver
- project their conversation loudly out into the room beyond
  - can have a normal conversation in a busy room while talking softly
  - are overwhelmed by acoustic focusing
  - none of the above
12. The best strategy for mitigating the noise of a large motorized piece of equipment is
- placing it in a room lined with absorptive material
  - using an array of isolators to disengage it from the building's structure
  - placing it in a room with thick concrete walls
  - Placing it outdoors
13. Room reverberation time can be decreased by
- increasing room size
  - adding absorptive materials
  - using electronic enhancement
  - all of the above



14. Impulse response diagrams can
- A. illustrate the reverberation time of a room
  - B. show flutter echoes
  - C. be used diagnostically by acoustic consultants
  - D. all of the above
15. According to Julian Treasure's TED Talk sound effects us
- A. psychologically
  - B. cognitively
  - C. behaviorally
  - D. all of the above
16. The easiest auditorium form to design for great symphonic acoustics is
- A. the surround hall
  - B. the wide hall
  - C. the shoebox hall
  - D. an outdoor venue
17. Acoustic clouds used in surround halls should be
- A. absorptive
  - B. hollow
  - C. concave
  - D. convex



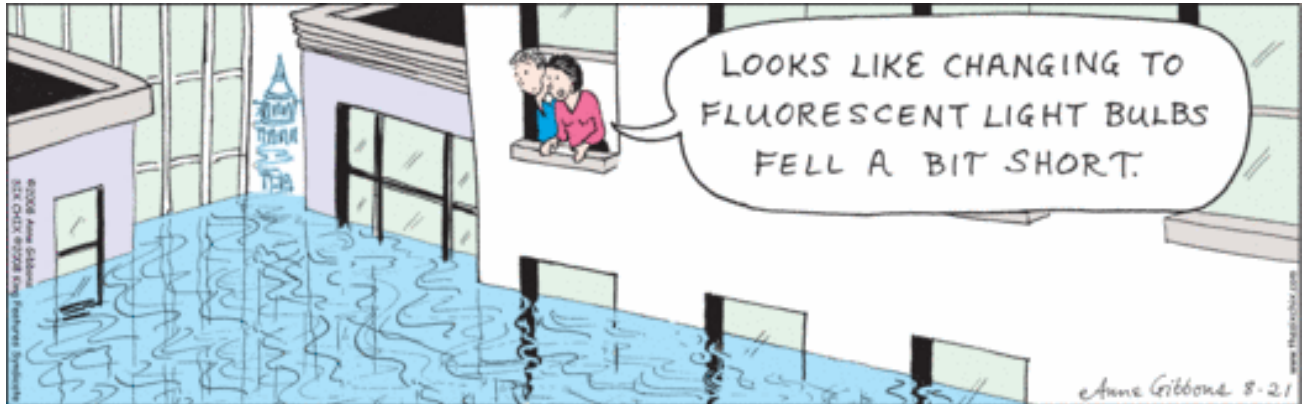
18. Successful multipurpose auditoria adjust their acoustic properties by
- A. using electronic enhancement
  - B. adjusting their volume
  - C. using moveable wall panels
  - D. all of the above
19. Bandshells like the Honolulu Bowl enhance outdoor performance by
- A. focusing sound on the audience
  - B. providing a first order reflection
  - C. providing many first order reflections
  - D. diffusing the sound of the performers

20. Ray tracing can be used in
- A. hand drawn acoustic analyses
  - B. in computer-based acoustic analyses
  - C. physical models for acoustic analysis
  - D. all of the above

## Review Questions (20)

21. The wonderfully daylighted spaces in the Musée d'Orsay in Paris are great examples of
- A. intentional design for flexibility
  - B. brilliant adaptive reuse
  - C. ultimate flexibility in design
  - D. all of the above
22. To create a glare-free daylighted office the designer should not
- A. use south-facing translucent glazing
  - B. specify clear north glazing with vertical fin shading
  - C. create skylights with deep, baffled lightwells
  - D. none of the above
23. On a sunny day the most desirable light source for a daylighted office is
- A. the sky component
  - B. the sun component
  - C. the external reflected component from a neighboring reflective glass curtain wall
  - D. none of the above
24. A top-lighted architecture studio would be most energy-efficient if
- A. walls and ceiling were white
  - B. walls and ceiling were light green
  - C. walls and ceiling were gray
  - D. walls were brown and ceiling white
25. The top-lighted architecture studio would be most effectively illuminated by
- A. a central skylight with an aperture  $\frac{1}{4}$  the area of the floor
  - B. a translucent ceiling
  - C. a 4 by 4 grid of skylights with a total area at  $\frac{1}{5}$  the area of the floor
  - D. roof monitors designed to wash the walls with light
26. In selecting software to predict light in buildings you'd desire
- A. the ability to model daylight
  - B. the ability to render light in space
  - C. integration of electric light and daylight
  - D. all of the above

27. You could use the daylighted artificial sky to evaluate daylighting for
- A. cloudy skies
  - B. partly cloudy skies
  - C. clear skies
  - D. all of the above



28. Electric lighting can be used therapeutically for
- A. dementia and Alzheimer's disease
  - B. jet lag treatment
  - C. seasonal affect disorder (SAD)
  - 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 life time cost is primary, B if first cost is primary
30. In a room illuminated by four recessed can lights you could predict illumination levels
- A. with the point source method
  - B. with the lumen method
  - C. with the zonal cavity method
  - D. with all of the above
31. The Western US differs from the Eastern US in that its
- A. colder
  - B. drier
  - C. flatter
  - D. all of the above
32. The water use plan for BedZED
- A. identifies water sources, uses, treatment, and reuse
  - 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 directing water to the cistern
  - D. all of the above
34. Stormwater that falls on a parking lot can be managed by
- A. pervious pavement
  - B. retention ponds
  - C. bioswales
  - D. all of the above
35. Dual-flush toilets are classified as
- A. ultra low-flush toilets
  - B. low-flush toilets
  - C. high efficiency toilets
  - D. minimally code-compliant toilets



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. A beneficial side effect common to both waste water treatment and solid waste landfills is
- A. adding green space to the landscape
  - B. keeping wastes out of view
  - C. methane harvesting for fuel
  - D. all of the above

38. A final score of 25 on the SBSE version of the Wells checklist indicates
- A. a degenerative building
  - B. a sustainable building
  - C. a regenerative building
  - D. a living building
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 mechanical system that could have a first law efficiency of  $>100\%$  is
- A. a solar hot water heater
  - B. an earth-coupled heat pump
  - C. both of the above
  - D. none of the above

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

