

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

### New Questions

1. A source of electricity that can use the utilities' distribution grid as storage in a net metering scheme is,

- A. a roof-top photovoltaic array
- B. residential scale wind turbines
- C. a micro-hydro generator
- D. all of the above

2. Sue Roaf's Ecohouse 2 demonstrates that passive houses that exploit site energy

- A. are not possible in the UK
- B. are being built worldwide
- C. exist only in the temperate climates of the southern US
- D. none of the above

3. As of 1999 the fossil fuels contribution to US energy production was approximately

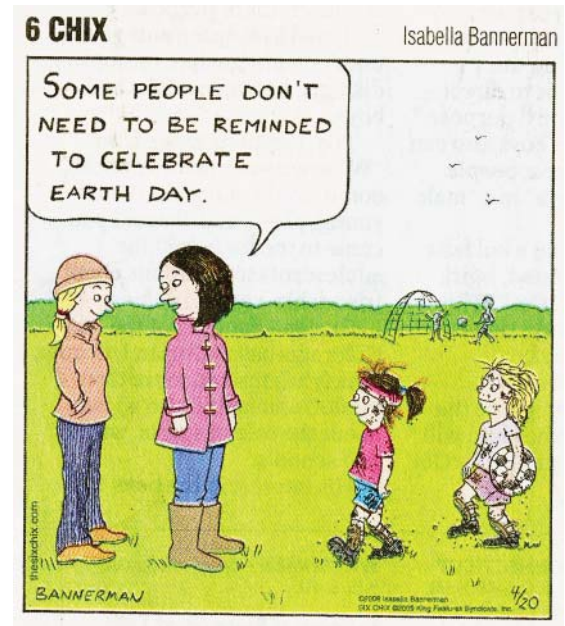
- A. 95%
- B. 80%
- C. 60%
- D. 40%

4. The combustion fuel that currently makes the least significant contribution to greenhouse gas build-up, which causes global climate change is

- A. coal
- B. natural gas
- C. bio-fuels
- D. gasoline

5. The energy strategy with the most potential and least expensive means toward contributing to meeting Mazria's goal of carbon-neutral by 2030 is

- A. wind power
- B. photovoltaics
- C. hydro-electric power
- D. conservation



6. Hydroelectric power generation emits no carbon but it's disadvantages include
- lowered potential for flood control
  - seasonally and diurnally fluxuating energy supply
  - disruption of ecosystems
  - all of the above
7. Compared to sound transmission in air, sound transmission in building materials is
- slower
  - about the same
  - faster
  - impossible
8. The most effective way of reducing the negative effects of noise generated off site is
- by using solid barriers midway between source and receiver
  - masking the sound with white noise
  - planting a row of trees between source and receiver
  - all of the above
9. Measures that reduce sound transmission between adjacent spaces include
- gaskets and weather stripping of doors
  - using bullet-proof or laminated glass
  - constructing intermediate walls with high STC ratings
  - all of the above
10. Impulse response diagrams for a classroom reveal
- it's sound decay over time
  - the magnitude of direct sound compared to reflected sound
  - the time delays associated with sound reflections
  - all of the above
11. The dBA scale is preferred for architectural acoustics because
- it treats all frequencies equally
  - it's weighted to the sensitivity of the human ear
  - it includes reverberation in the scale
  - it's a logarithmic scale
12. If two sound sources simultaneously produce sounds of 0 and 1 dBA, the resultant sound is
- 1 dBA
  - 1.8 dBA
  - 2.8 dBA
  - 3.5 dBA



13. If you experience a flutter echo in a space, it is likely to have
- A. a concave reflective surface
  - B. a convex reflective surface
  - C. parallel reflective walls
  - D. none of the above
14. Carnegie Hall in New York is a classic example of
- A. a wide hall
  - B. a shoebox hall
  - C. a surround hall
  - D. a symphony hall
15. During summertime concerts on warm days, the back wall at Seiji Ozawa Hall in Tanglewood, MA
- A. is acoustically absorptive
  - B. allows the seating capacity to be increased
  - C. prevents echoes at the front of the hall
  - D. all of the above
16. A suitable multi-purpose hall can be achieved by
- A. electronic enhancement
  - B. movable wall or ceiling partitions
  - C. movable seating
  - D. all of the above
17. The acoustic advantage of playing music in a traditional bandshell over playing in open air is
- A. the audience gets a strong reflected sound wave
  - B. no degradation of sound over distance
  - C. concert hall-like acoustics
  - D. all of the above
18. A physical acoustic model that uses a laser pointer aimed at corrugated cardboard and foil to simulate a classroom can
- A. help visualize ray tracing in the space
  - B. demonstrate the reverberation time
  - C. show diffuse reflections
  - D. all of the above
19. The space on the acoustic tour of campus that proved to be acoustically dead was
- A. St. Augustine's chapel
  - B. the SUB ballroom
  - C. Lionel Hampton School of Music recital hall
  - D. none of the above

20. During the music and architecture slide/tape a motet was performed in
- Santa Maria in Florence, Italy
  - the church at Santiago de Campostela in Spain
  - San Marco in Venice, Italy
  - all of the above

### Review Questions



21. Effective daylighting is linked to sustainability because
- it reduces electric lighting use
  - requires no carbon-emissions for light production
  - it enhances health and productivity
  - all of the above
22. An opaque transmitter
- provides diffuse light
  - is a potential bright spot in an otherwise dark environment
  - is an oxymoron, since it does not transmit light
  - none of the above
23. Given a 16 candela source at the center of a four-foot radius sphere whose transmittance is 0.50,
- the illuminance of the outside surface is one foot lambert
  - the luminance of the outside surface is 0.50 foot lamberts
  - the source produces about 64 lumens
  - all of the above
24. Daylighting in classrooms is important because
- over 80% of school energy is spent on electric lighting
  - it provides even, consistent light
  - good daylighting improves learning
  - all of the above



25. Lightshelves are an effective daylighting strategy because they
- A. increase daylight levels deep in a space
  - B. reduce daylight levels near the window
  - C. even out distribution of light in the space
  - D. all of the above
26. The currently viable daylight prediction software that is capable of dealing with all possible room configuration and sky condition scenarios is
- A. SPOT
  - B. Lumen-Micro
  - C. AGi32
  - 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 lamp with the lowest color rendering index is
- A. cool white fluorescent
  - B. low pressure sodium
  - C. mercury halide
  - D. incandescent
29. A lamp's photometric curve is valuable in determining its
- A. color rendering index
  - B. category—direct or indirect
  - C. its role in a luminous ceiling
  - D. all of the above
30. An open-plan office that requires about 30 footcandles on the work plane needs 36 fixtures according to the Zonal Cavity Method. Which of the following arrays of fixtures is acceptable for the space?
- A. a 6 by 6 array
  - B. a 5 by 7 array
  - C. a 3 by 13 array
  - D. any of the above



31. A water problem pertinent to the western U.S. is
- A. excessive groundwater extraction
  - B. xeriscaping
  - C. over zealous toilet size regulation
  - D. all of the above
32. The roofs at BedZED and the Eden project are similar in that both
- A. are designed to collect stormwater in cisterns
  - B. use roofing materials that assure high quality water
  - C. provide only toilet-flushing water
  - D. all of the above
33. Moscow's Sweet Avenue Paradise Creek restoration project exemplifies
- A. treatment of parking lot runoff
  - B. mitigation of flooding
  - C. integration of streams and pedestrian trails
  - D. all of the above
34. A system that is effective in treating black water in an urban setting is
- A. a composting toilet
  - B. a waterless urinal
  - C. a block-scale living machine
  - D. all of the above
35. Creek bed channelization of Paradise Creek encourages
- A. flooding
  - B. cross-media pollution
  - C. polluted highway run-off
  - D. all of the above
36. The typical dumpster contains
- A. about 10% recyclable materials
  - B. about 20% recyclable materials
  - C. about 30% recyclable materials
  - D. over 50% recyclable materials
37. SBSE's revision of Malcolm Wells' wilderness-based checklist for design and construction is
- A. an objective assessment of sustainability
  - B. more accurate than the LEED checklist in assessing sustainable design
  - C. a means for separating site and building issues in regenerative design
  - D. all of the above

## Sally Forth

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38. Today's best environmentally friendly buildings
- A. exceed the energy code
  - B. achieve carbon neutrality
  - C. use zero net imported energy
  - D. all of the above
39. A building with a low life cycle cost may have
- A. the lowest first cost
  - B. the lowest maintenance and operating costs
  - C. alternative energy systems that payback over a relatively short period
  - D. any of the above
40. LEED platinum projects are
- A. affordable only to the altruistic advocates of better building
  - B. within 10% of the initial costs of code-compliant projects
  - C. the ultimate in regenerative architectural design
  - D. none of the above

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