

30 Multiple Choice Questions

1. Effective use of daylighting in buildings can be linked to
 - A. sustainability
 - B. improved occupant productivity
 - C. reduced energy use
 - D. all of the above

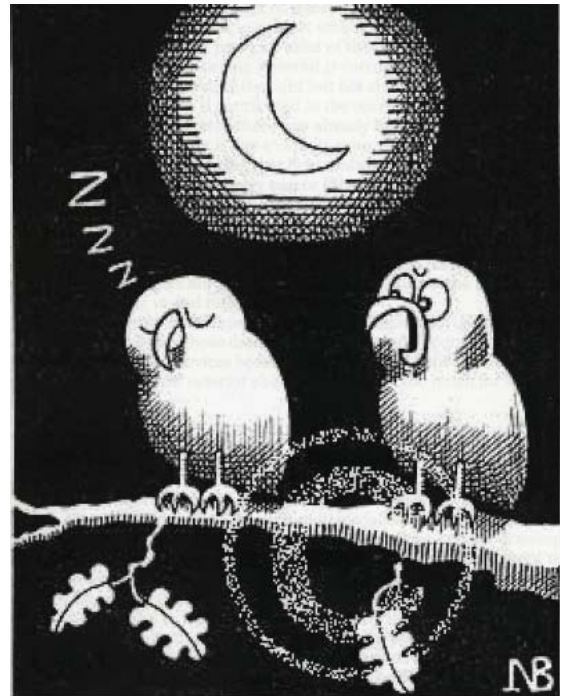
2. An office building most likely to be effectively daylighted was built
 - A. to LEED silver standards
 - B. before use of air-conditioning became widespread
 - C. between 1965 and 1972
 - D. none of the above

3. A daylighted building that was actually designed for evolution, flexibility, and adaptability is
 - A. Gehry's Walt Disney Concert Hall in LA
 - B. Gare d'Orsay in Paris
 - C. Aalto's Riola Church in Italy
 - D. none of the above

4. An example of a diffusely reflective architectural surface is
 - A. the titanium panels of Gehry's Stata Center at MIT
 - B. the polished black marble wall of Lin's Viet Nam War Memorial
 - C. an ordinary reflective glass office tower
 - D. none of the above

5. Why is Weber's Law pertinent to lighting design?
 - A. It supports the case for objective measurement of light levels.
 - B. It helps in calculating illumination levels on the work plane.
 - C. It supports the case for perception-based assessment of lighting.
 - D. none of the above

6. Assuming equal surface luminance, we would be most visually sensitive to a
 - A. red fire truck
 - B. blue police car
 - C. a yellow house
 - D. a deep purple sky



YOU'VE BEEN DAYLIGHTING, HAVEN'T YOU?

7. How far from a single 2514 lumen source in a darkened room must you be to measure 6.25 footcandles of direct illumination?

- A. 20 feet
- B. 8 feet
- C. 1 foot
- D. none of the above

8. To determine the surface brightness of a gallery wall, you would use

- A. a light meter
- B. an illuminance meter
- C. a luminance meter
- D. a luminous flux detector

9. A student's desk in a daylighted classroom will be lighted by

- A. the blue or cloudy sky
- B. reflected light from external objects
- C. the room's walls and ceilings
- D. all of the above

10. The UI Commons food court is beautifully daylighted because

- A. all its windows face due north
- B. all windows use translucent glazing
- C. all its roof monitor windows are effectively shaded
- D. none of the above

11. You can experience the cool nature of daylight by observing

- A. simultaneously light from a north-facing and a south-facing skylight at noon on a sunny day
- B. the seasonal difference between summer light and winter light in a sidelighted building
- C. cloudy sky daylight versus incandescent or warm white fluorescent light in a space
- D. all of the above

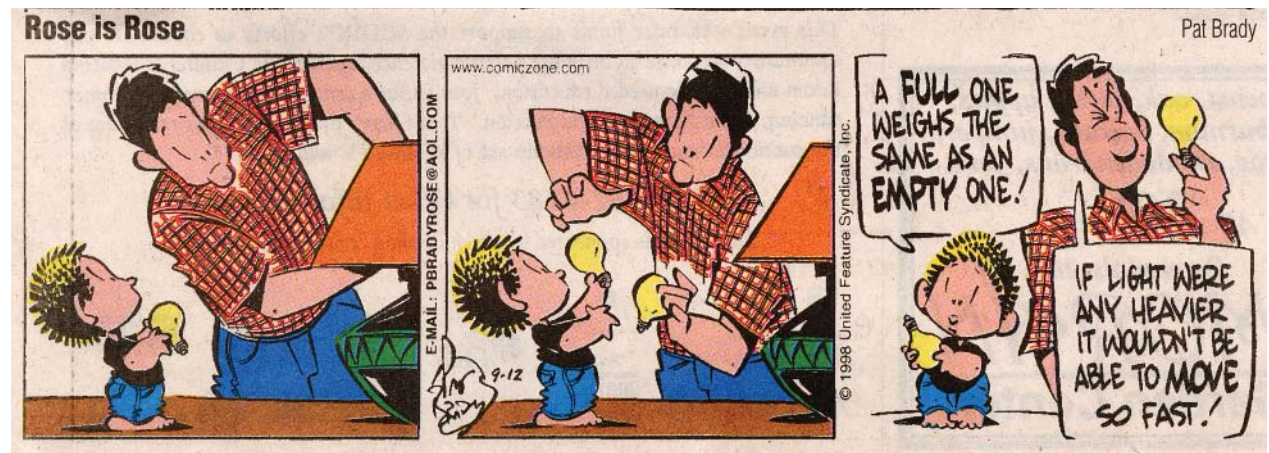
12. A large, single story grocery store can be effectively daylighted by

- A. a translucent skylight as big as the floor plate
- B. with a very high aperture in a hipped roof with a cathedral ceiling
- C. small skylights dispersed over the floorplate, and totalling no more than 25% of the floor area
- D. clerestory windows on all exterior walls

13. A lightshelf's most important role in daylighting is to

- A. increase the amount of light in the interior space
- B. provide more even distribution of light in the interior space
- C. act as an effective shading device
- D. all of the above

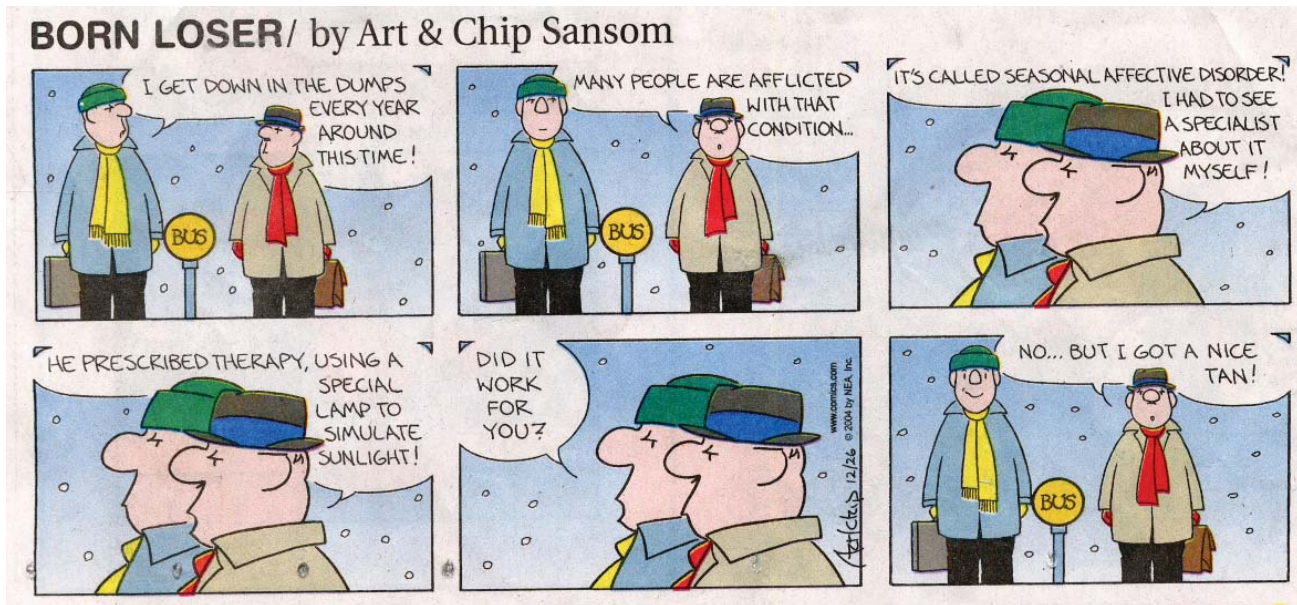
14. The hand calculation method that results in the most satisfactorily and easily obtained visualization of light distribution in an architectural space is
- the LOF lumen method
 - the BRS protractor method
 - the Graphic Daylight Design Method
 - none of the above, a computer program is required
15. If you wanted to do quick modeling of different options for daylighting and its thermal consequences in a rectilinear space that has apertures in only one surface, you could use
- ArchiPhysics Daylight program
 - AGi 32
 - Ecotect
 - any of the above
16. Computer-based daylight prediction programs allow you to
- study light distribution in the space
 - study integration of electrical and natural light
 - model alternative design solutions
 - all of the above
17. Physical daylighting models are effective because
- light interacts with the model the same as it interacts with a full scale room
 - they can allow you to photograph alternative designs for side-by-side comparison
 - well-crafted models look like the real full-scale room
 - all of the above
18. An artificial sky is useful in physical model testing because
- it reproduces the luminance of a cloudy sky
 - it reproduces the light distribution of a standard cloudy sky
 - It reproduces the light quality of a cloudy sky
 - all of the above



19. A 200-watt lamp with high efficacy is likely
- A. to provide superior color rendering
 - B. to last longer than one with lower efficacy
 - C. to be effective in mitigating SAD
 - D. all of the above

20. HID lamps with the best color rendering are
- A. high pressure sodium
 - B. mercury vapor
 - C. metal halide
 - D. florescents with special phosphors

21. Daily exposure to full-spectrum lighting can result in
- A. melatonin enhancement
 - B. avoidance of SAD
 - C. effective treatment of jet lag
 - D. all of the above



22. The most energy-efficient lamps that you can buy today are
- A. incandescent
 - B. compact fluorescent
 - C. high pressure sodium
 - D. light-emitting diodes

23. What is a reasonable argument for not switching off electric lights when daylight is adequate?
- A. the lamps won't last as long
 - B. very little energy will be saved
 - C. electric lighting improves the quality of daylight
 - D. none of the above

24. Color rendering for HID lamps can be improved by
- using only metal halide lamps
 - applying phosphors to the inner surface of the bulb
 - using them only in high-bay applications
 - none of the above
25. A fixture and lamp's photometric curve characterizes
- the quality of light provided
 - light distribution from the fixture
 - the luminance of the lamp at different angles
 - all of the above
26. Fixtures that most seamlessly integrate with daylighting provide
- direct illumination
 - direct/indirect illumination
 - indirect illumination
 - all of the above
27. A ceiling-mounted direct fixture with parabolic louvers
- avoids most glare problems for computer users
 - avoids most gloom problems
 - provides better ambient light than diffuse fixtures
 - all of the above
28. Historic GE advertisements linked high light levels to
- patient health
 - office productivity
 - superior performance in school
 - all of the above
29. In the lumen method the Coefficient of Utilization models
- the loss of light from a wide variety of operating conditions
 - the interaction of room surfaces and the fixtures
 - the efficacy of the lamp and fixture
 - none of the above
30. You've used the line source method to predict the illumination delivered to your exam paper in TLC 032. You'd be surprised if
- the prediction was optimistic
 - the prediction was right on
 - the prediction was pessimistic
 - either A or B above occurred

