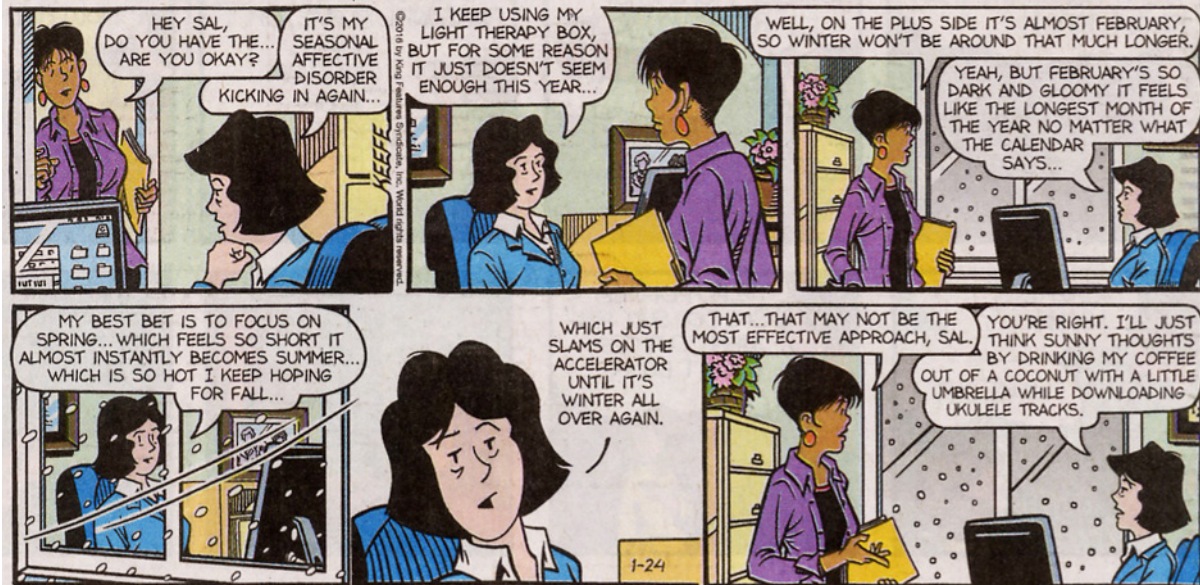


Arch 464
ECS
Midterm I
Spring 2018

30 Multiple Choice Questions

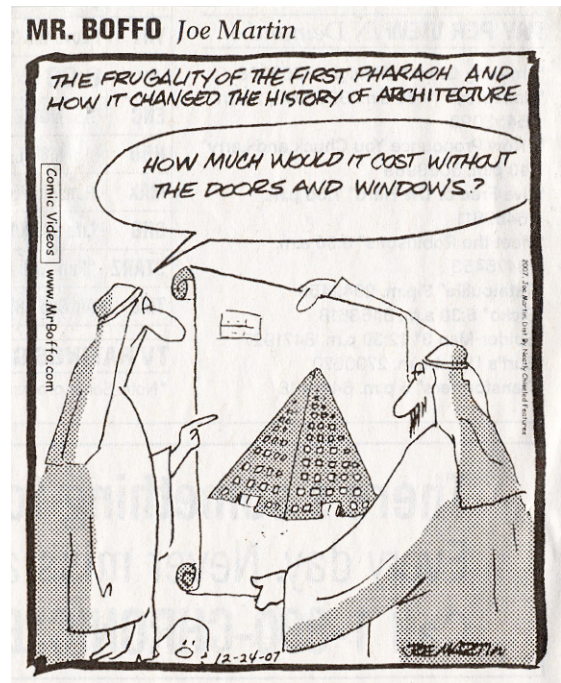
SALLY FORTH/ by Francesco Marciuliano & Jim Keefe

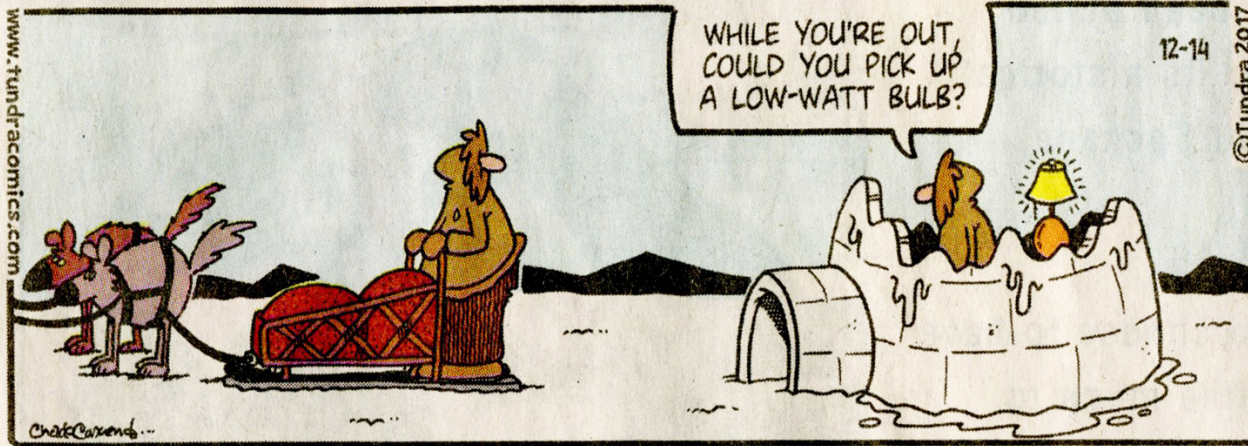


1. What's "the best text book in the universe"?
 - A. Sun Wind and Light
 - B. The Green Studio Handbook
 - C. MEEB
 - D. Heating Cooling and Lighting
2. When implementing a daylighting strategy, which of the following is not an important consideration?
 - A. Environmental
 - B. Architectonic
 - C. Human
 - D. all of the above are important
3. 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
4. Which type of transmitter is a possible source of glare?
 - A. specular
 - B. diffuse
 - C. both of the above
 - D. none of the above

5. Which of the following projects uses specularly reflective surfaces as a design element?
- A. Maya Lin's Viet Nam Memorial in Washington, DC
 - B. the mirrored dance studio at the Atlantic Center for the Arts
 - C. Frank Gehry's Stata Center on the MIT campus
 - D. all of the above
6. Which of the following scenarios is an example of Weber's Law?
- A. sensing the visual discomfort of a day-glo lime green wall
 - B. preferring cool light in a brightly illuminated space
 - C. just noticing a change in illumination levels when 10 foot candles have been added
 - D. all of the above
7. A 5 candela light source provides
- A. 5 lumens
 - B. 63 lumens
 - C. 5 footcandles
 - D. 125 lux
8. Given a light source with luminous intensity of 10 candelas
- A. its luminous flux would be 10 lumens
 - B. the density of its luminous flux at 2 feet is 2.5 fc
 - C. the luminance of a 50% reflective surface at 2 feet would be 2.5 fl
 - D. all of the above
9. 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. all of the above
10. On a perfectly cloudy day
- A. the horizon is 3 times brighter than the zenith
 - B. the zenith is twice as bright as the horizon
 - C. the north and south building façades receive equal daylight
 - D. none of the above
11. Imagine two rooms with identical light sources, room A with all surfaces at 50% reflectivity and room B with all surfaces at 25% reflectivity.
- A. Room A is 2 times brighter
 - B. Room A is 3 times brighter
 - C. Room A is 6 times brighter
 - D. Room A is 16 times brighter
12. On sunny summer and winter days Phillip Johnson's New Canaan, CT, glass house
- A. appears warmer in summer
 - B. appears warmer in winter
 - C. is sun lighted in summer
 - D. is daylighted in winter

13. The top lighting roof monitors in the UI Commons atrium
- abide by the rule-of-thumb for skylighting
 - are too big
 - are too small
 - are not considered skylighting
14. Glare can be mitigated by
- apertures in more than one surface
 - splayed apertures
 - high IRC
 - all of the above
15. The best hand method for predicting daylighting
- calculates exact illumination at a point in space
 - shows the relationship between light and architectural space
 - gives a photorealistic rendering of space
 - all of the above
16. The best computer-based methods for predicting daylighting
- give fairly accurate calculations of light levels
 - show the relationship between light and architectural space
 - render surface brightness
 - all of the above
17. If you wanted to determine annual climate-based daylight performance, you'd model your building with
- AGI-32
 - Sefaira
 - either of the above
 - none of the above
18. A well crafted physical daylighting model allows you to
- check out your shading strategies
 - compare iterations of your design through photography
 - measure light distribution in the space
 - all of the above
19. The daylighted artificial sky
- maintains a distribution of light consistent with a perfectly cloudy day
 - is effective under any outdoor sky condition (except night)
 - encourages an energy conserving mind-set
 - all of the above
20. The upper gallery of LA's Broad Museum
- has a toplighted luminous ceiling
 - has no sidelighting
 - admits large quantities of direct sunlight
 - all of the above





12-14

21. Electrical lighting illumination replaced daylighting as the primary source of daytime illumination in office buildings
- in 1879 when Edison's incandescent lamps were introduced
 - in 1936 when fluorescent lamps were introduced
 - after World War II
 - after the OPEC oil embargo of 1972
22. Exposure to blue light just before bed time upsets circadian rhythms due to
- Cortisol suppression
 - Melatonin suppression
 - Body temperature suppression
 - all of the above
23. A 5-year replacement schedule for fluorescent lamps in a university classroom
- allows many lamps to fail before replacement
 - is right on
 - is conservative
 - is extremely conservative
24. The factor that most affects color rendering is
- lamp type
 - color temperature
 - spectral distribution of energy
 - none of the above
25. RGB LEDs
- have a high CRI
 - are rated by an alternative system
 - cannot be assigned a color rendering rating
 - all of the above

26. Which of the following lamps has the highest potential for flicker?
- A. magnetic ballast CFLs
 - B. electronic ballast fluorescent tubes
 - C. mercury vapor lamps
 - D. improperly installed LEDs
27. The most efficient fixture for ambient lighting is
- A. direct
 - B. direct/indirect
 - C. indirect
 - D. any of the above
28. The most effective fixture for a room with a low IRC is
- A. direct
 - B. direct/indirect
 - C. indirect
 - D. any of the above
29. The point source calculation method
- A. gives the exact illumination level at a single point
 - B. ignores the IRC
 - C. gives the surface luminance at a single point
 - D. can be used to calculate ambient light under a luminous ceiling
30. Light distribution from a lamp and its fixture is described by
- A. its photometric curve
 - B. its coefficient of utilization
 - C. its lumen output at 40% life
 - D. all of the above