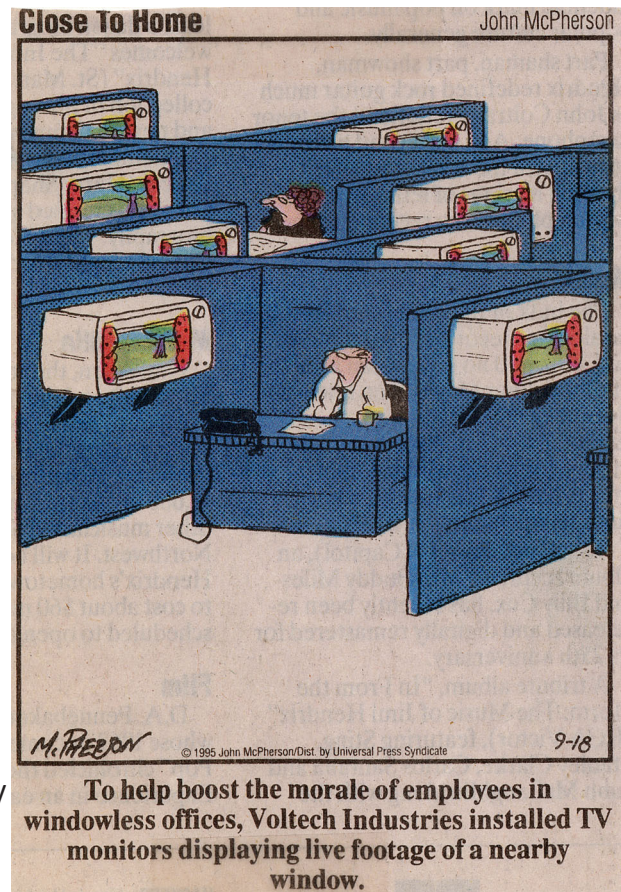


Arch 464  
ECS  
Midterm II  
Spring 2016

### 30 Multiple Choice Questions

- Lamp efficacy is measured in
  - watts per square foot
  - lumens per watt
  - footcandles per watt
  - all of the above
- Spectral distribution of light from a lamp is most closely related to its
  - color rendering ability (CRI)
  - life expectancy (hours)
  - lumen output
  - energy efficiency
- LED lamps are becoming more widely specified by lighting designers because
  - they are energy efficient
  - they can have high CRI ratings
  - they can be programmed to change color
  - all of the above
- Blue light
  - suppresses melatonin
  - is sensed by non-visual receptors in the eye
  - can be used to treat SAD patients
  - all of the above
- If you wanted to calculate the ambient lighting from a luminous ceiling you'd use
  - the point-source method
  - the line-source method
  - the zonal cavity method
  - none of the above
- The photometric curve for a lamp and fixture combination
  - is a sectional representation of apparent intensity of the light at different angles of view
  - is necessary for point source calculations of illuminance
  - is necessary for line source calculations of illuminance
  - all of the above



7. Cross media pollution of the aquifer is caused by
  - A. toxic wastes in landfills or retention ponds
  - B. wells drilled to the aquifer
  - C. pesticides and herbicides used on agricultural lands
  - D. all of the above
  
8. The US annual rainfall map shows that
  - A. the East is uniformly dry
  - B. the West is uniformly dry
  - C. the West is dry, but punctuated by wet coastal and mountain areas
  - D. the wettest area is the gulf coast of LA, AL, and MS
  
9. Ground water extraction in the West is most significant in
  - A. California's Central Valley
  - B. the Snake River area of Idaho
  - C. both A and B are significant
  - D. none of the above
  
10. A viable water conservation plan that saves water beyond code requirements is
  - A. gray water filtering and reuse
  - B. black water filtering and reuse
  - C. installation of low-flow toilets
  - D. all of the above
  
11. Ground water resource regions are determined by
  - A. political boundaries
  - B. topography
  - C. building code
  - D. all of the above
  
12. Corbu's Notre Dame du Haut at Ronchamps features
  - A. roof catchment, scupper, and cistern
  - B. swales for capturing storm water
  - C. composting toilets
  - D. all of the above
  
13. Portland's Water Pollution Control Laboratory has a retention pond that is designed to treat storm water
  - A. from its 50-acre neighborhood
  - B. from its roof run-off
  - C. from its parking lot
  - D. none of the above
  
14. Parking lots can be designed to manage storm water effectively by
  - A. incorporating bioswales
  - B. incorporating pervious parking surfaces
  - C. incorporating retention ponds
  - D. all of the above



15. High quality storm water from a roof can be collected if
- A. it's a green roof
  - B. the initial runoff is discarded
  - C. asphalt composite roofing is used
  - D. all of the above
16. Green roofs' most important attribute for storm water management is
- A. reducing and slowing water flowing to streams or rivers
  - B. reducing the urban heat island effect
  - C. absorbing air-borne pollution
  - D. all of the above
17. For a city that has a municipal constructed wetlands for waste water treatment, the most practical scheme for treating waste water is
- A. to treat all waste water off-site
  - B. to treat black and gray water off-site, storm water on-site
  - C. to treat black water off-site, gray and storm water on-site
  - D. to treat all waste water on-site
18. Biological treatment of waste water is possible because
- A. waste water is nutrient-rich
  - B. our society is technically savvy
  - C. final cleansing can be done at a municipal treatment plant
  - D. No! It can't be done biologically.
19. Communal toilets are a cultural feature of
- A. Ancient Greece
  - B. Victorian England
  - C. Berkeley, California
  - D. all of the above



20. A high-efficiency toilet is required to average
- A. no more than 1.6 gal/flush
  - B. no more than 1.3 gal/flush
  - C. no more than 1 gal/flush
  - D. no more than 0.5 gal/flush
21. Waterless urinals
- A. save at least 1 gallon/flush over conventional urinals.
  - B. are not connected to the municipal sewers
  - C. incinerate the urine
  - D. all of the above
22. Steps to improve water quality in the Palouse's Paradise Creek include
- A. annual stream clean-up events
  - B. creek restoration projects
  - C. storm water retention on construction sites
  - D. all of the above
23. Since 1985 US Municipal Solid Waste treatment has benefitted by
- A. steadily increasing recycling
  - B. high-tech landfills
  - C. waste to energy plants
  - D. none of the above
24. Best practice construction site waste management can attain a waste reduction goal of
- A. 30%
  - B. 50%
  - C. 70%
  - D. 90%



25. Which sector of the US economy is responsible for the most metric tons of carbon emissions?
- A. Buildings
  - B. Transportation
  - C. Industry
  - D. Government
26. SBSE's Regeneration-Based Checklist for Design and Construction is an improvement over Malcolm Wells' original Wilderness-Based Checklist because
- A. it awards more points
  - B. it addresses carbon emissions issues
  - C. it clearly denotes site and building issues
  - D. it highlights sustainable design as the most desirable goal
27. The first cost of a green building may be a few percent higher than a similar conventional building, but the cost is paid back in a short time frame by
- A. energy savings
  - B. improved worker productivity
  - C. lower operating expenses
  - D. all of the above
28. Economic Cost Analysis, which values energy in dollars, is best assessing environmental value because
- A. it is sensitive to the triple bottom line
  - B. it considers future scarcities
  - C. investment capital for infrastructure is included
  - D. none of the above
29. The best possible first law efficiency for a heating and cooling device is
- A. about 90%
  - B. 100%
  - C. more than 100%
  - D. more than 300%
30. Embodied energy (or carbon) calculations include
- A. raw material extraction energy
  - B. manufacturing energy
  - C. transportation energy
  - D. all of the above

Get ready for Quiz #3!

