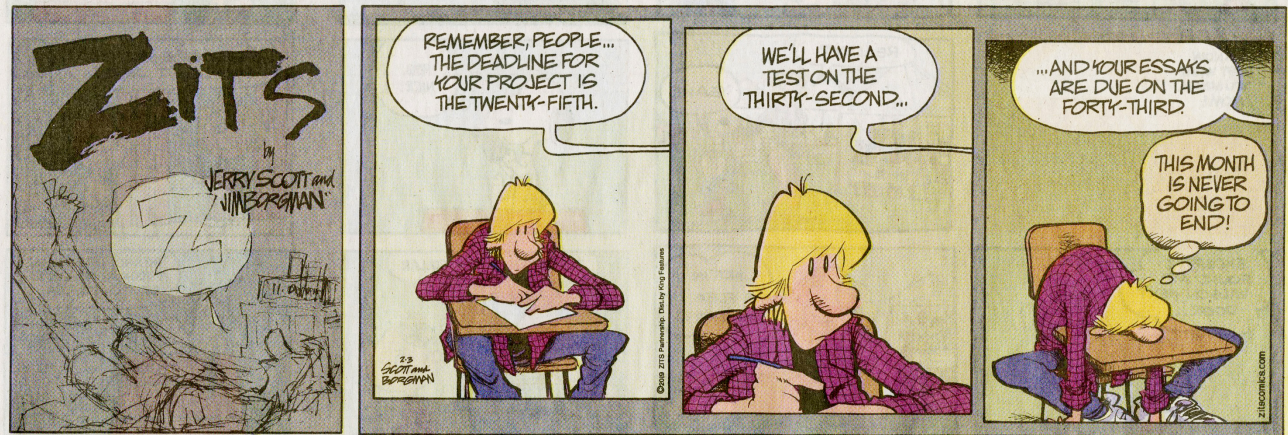


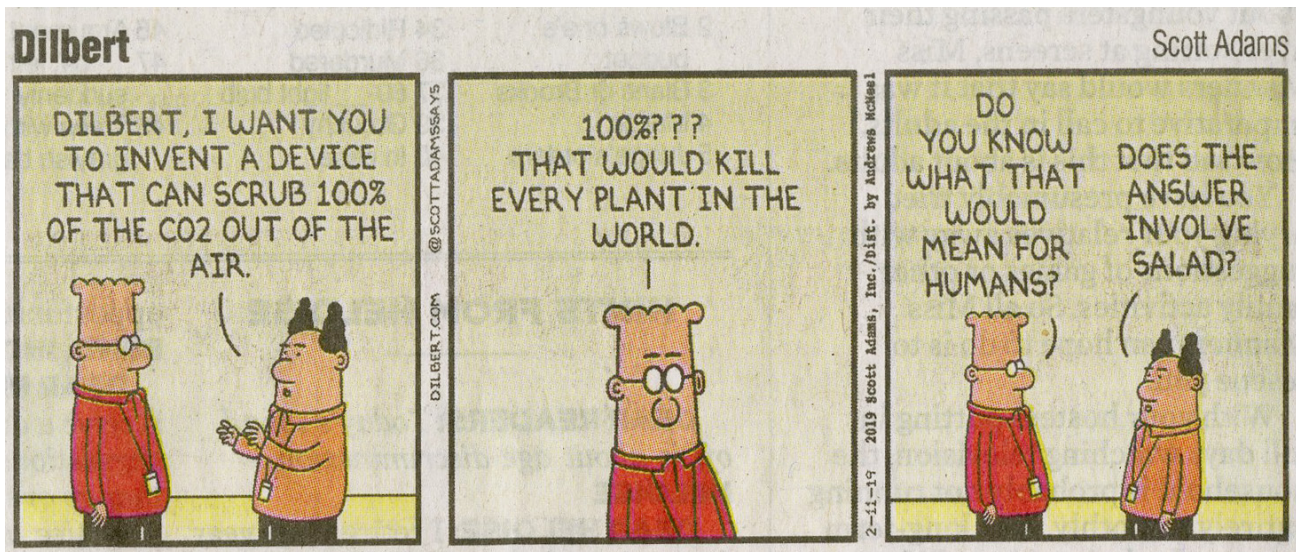
**Arch 464  
ECS  
Midterm II  
Spring 2019**

**30 Multiple Choice Questions**



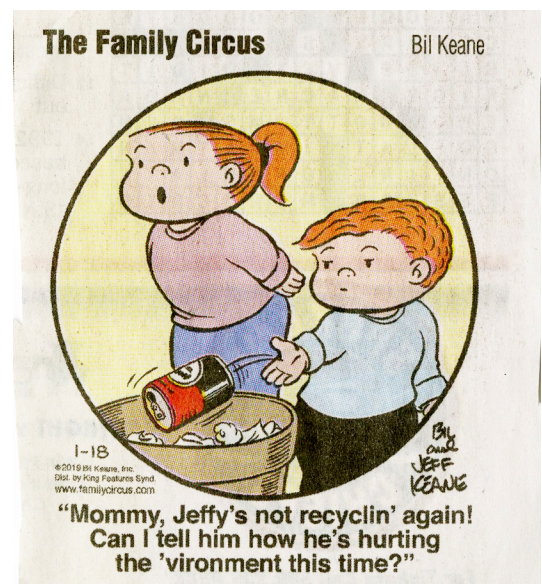
1. Most of the surface of the earth is under water, yet water is a scarce commodity because
  - A. less than 1% of it is potable
  - B. most potable water is wasted
  - C. water rights laws restrict its use
  - D. none of the above
2. The evapo-transpiration cycle creates pure water
  - A. in the clouds
  - B. as rainfall
  - C. both the above
  - D. none of the above
3. A National Geographic Magazine writer reported his family on a daily basis uses
  - A. about twice as much potable water as other families studied
  - B. about three times as much potable water as other families studied
  - C. about four times as much potable water as other families studied
  - D. over six times as much potable water per person as other families studied
4. Which of the following is not a problem with water in the western U.S.?
  - A. frequent draughts
  - B. xeriscaping
  - C. ecological concerns
  - D. all of the above are problems

5. A new home's water use can be reduced by
- A. installing low-flush toilets
  - B. reusing gray water
  - C. taking baths rather than showers
  - D. all of the above
6. Ancient Greek amphitheaters often
- A. had cisterns beneath the stage
  - B. used the seating area as catchment
  - C. used the landform above the seating as catchment
  - D. all of the above



7. Moscow's potable water storage tanks are located on hill tops to
- A. use gravity to supply water pressure
  - B. serve as community landmarks
  - C. pump well water at night to avoid peak energy charges
  - D. all of the above
8. Constructed wetlands are appropriate for waste water treatment at the
- A. city scale
  - B. neighborhood scale
  - C. building scale
  - D. all of the above
9. A common element in the stormwater strategies at Portland's Water Pollution Control Laboratory and Village Homes is
- A. a neighborhood scale retention pond
  - B. swales for capturing stormwater
  - C. constructed wetlands
  - D. all of the above

10. Green roofs help manage stormwater by
- retaining much of the stormwater on the roof
  - providing habitat for wildlife
  - mitigating the urban heat island effect
  - all of the above
11. Constructed wetlands and living machines are effective in treating black water because
- plants require water
  - chlorophyll absorbs pollutants
  - black water is nutrient rich
  - all of the above
12. The Center for Regenerative Studies' series of ponds treats waste water with
- duck weed and cattails
  - tilapia
  - water hyacinth
  - all of the above
13. Communal toilets are a feature of
- modern streetscapes in Paris and London
  - Cuzco, Peru
  - ancient Greece
  - Copenhagen
14. Toilets that use less water than the plumbing code mandates are classified
- ultra low-flush (ULF)
  - high efficiency (HET)
  - incinerating
  - all of the above
15. Low-tech composting toilets require
- a vent stack
  - added organic material
  - basement space for the compost chamber
  - all of the above
16. Paradise Creek restoration efforts since 1999 have
- lessened the threat of flooding
  - provided beaver habitat
  - reduced stormwater flow from parking lots
  - all of the above
17. In the U.S. the solid waste recycling rate dramatically increased in
- 1960
  - 1986
  - 2001
  - 2009



18. Proactive management of construction sites can
- A. divert up to 95% of construction wastes from landfill
  - B. control stormwater run-off
  - C. earn LEED and Living Building Challenge credits
  - D. all of the above
19. Over 95% of municipal solid waste is recycled or incinerated in
- A. the U.S.
  - B. the U.K.
  - C. Germany
  - D. Bulgaria
20. Which sector of the U.S. economy is responsible for the greatest amount of CO2 emissions?
- A. buildings
  - B. transportation
  - C. industry
  - D. sports and entertainment
21. The most ecologically beneficial new building is designed to
- A. be LEED Platinum
  - B. meet the Living Building Challenge
  - C. be regenerative
  - D. any of the above
22. The SBSE version of the Wells Checklist
- A. gives both positive and negative points
  - B. distinguishes between building and site issues
  - C. is available in multiple languages
  - D. all of the above
23. The European Union requires public buildings to
- A. pay a tax for carbon emissions
  - B. exceed the EU energy code
  - C. publicly display their energy performance data
  - D. all of the above
24. The largest savings generated by a green building is in
- A. worker productivity
  - B. first costs and operational costs of the building
  - C. energy savings
  - D. government and utility incentives
25. First Law Efficiency of total energy use in the U.S. is
- A. over 60%
  - B. about 50%
  - C. less than 40%
  - D. exactly 26%

26. Your client's time preference for money is quantified as
- A. interest rate
  - B. rate of inflation
  - C. discount rate
  - D. all of the above
27. A prominent European building that "breaths" through naturally ventilated gardens is
- A. the John Hope Gateway at the Royal Botanic Gardens Edinburgh
  - B. Scottish Parliament
  - C. London's "Gherkin"
  - D. the Queen's Building at DeMontfort University
28. On-site energy production with the shortest pay-back time is
- A. photovoltaics
  - B. small flow hydro
  - C. wind turbines
  - D. solar hot water
29. Before it was demolished the Sainsbury's grocery store in North Greenwich, U.K. featured sustainable strategies including
- A. wind turbines
  - B. daylighted aisles
  - C. earthtube ventilation
  - D. all of the above and more
30. A rationale for using both micro hydro and photovoltaics for producing on-site energy is
- A. both require battery storage
  - B. PVs are most productive in summer—micro hydro in winter
  - C. PVs don't produce at night
  - D. all of the above

