

30 Multiple Choice Questions



1. If global warming melts the earth's polar icecaps, available fresh water will
 - A. be increased greatly
 - B. stay the same
 - C. be decreased greatly
 - D. none of the above
2. Agricultural lands may potentially pollute surface water
 - A. through tilling practices that cause erosion
 - B. when herbicides and pesticides are applied
 - C. by channelizing streambeds and removing riparian zones and wetlands
 - D. all of the above
3. In the Western US water supply problems have been mitigated by
 - A. mandatory xeriscaping
 - B. requiring low-flush toilets
 - C. banning construction of new dams
 - D. all of the above
4. The city of Moscow has shown that increasing population
 - A. increases the per capita water use
 - B. can show decreased per capita water use through city-sponsored programs
 - C. has no effect on per capita water use
 - D. depletes the aquifer at an alarming rate

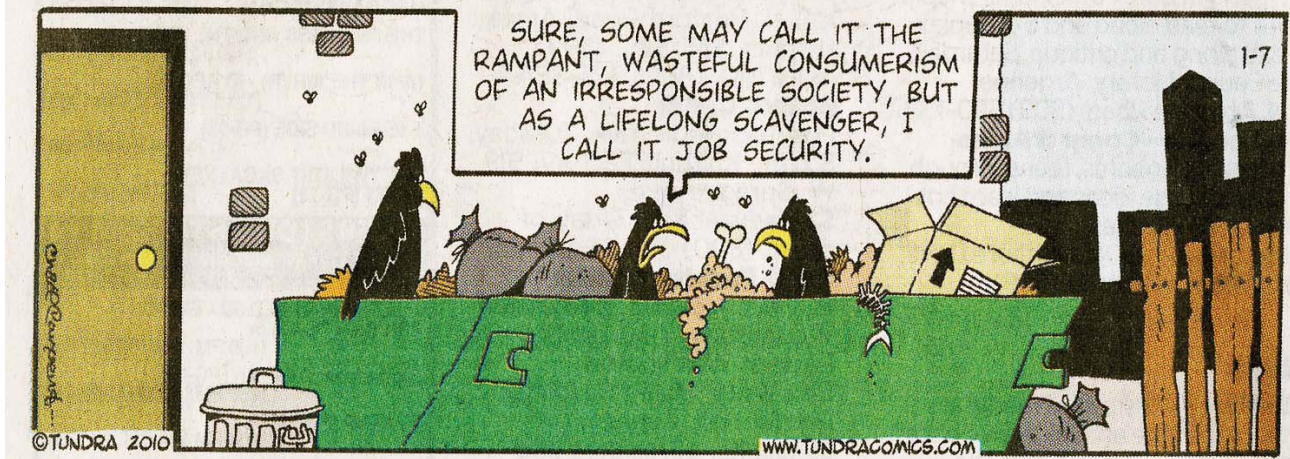
5. Water catchment systems for harvesting rainwater for potable uses
- A. are a recent architectural innovation
 - B. require filtering and testing to assure quality
 - C. can be easily incorporated with green roof systems
 - D. all of the above
6. The lowest cost method of providing tertiary treatment of municipal wastewater is
- A. a conventional centralized wastewater treatment plant
 - B. a city-scale living machine
 - C. constructed wetlands
 - D. a network of septic tanks and leach fields
7. The retention pond at the Portland Water Pollution Control Lab
- A. treats parking lot run-off
 - B. collects run-off from a 50-acre neighborhood
 - C. is the destination for the building's roof drainage
 - D. all of the above
8. Bioswales
- A. are effective for treating parking lot run-off
 - B. incorporate vegetation that helps clean water
 - C. should be designed to usually allow water to percolate or evaporate
 - D. all of the above
9. An extensive green roof
- A. requires soil depths of one to three feet
 - B. effectively controls storm water and mitigates the city effect
 - C. is illegal in high seismic vulnerability zones
 - D. all of the above
10. Black water sent to the local waste water treatment plant can be reduced by
- A. replacing standard toilets with dual flush toilets
 - B. upgrading to low-flow fixtures in the kitchens and bathroom sinks
 - C. recycling grey water on-site
 - D. all of the above

Tundra

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11. Waste water treated by a living machine is
- A. only suitable for recharging the aquifer
 - B. can be used to water non-edible plants
 - C. requires tertiary treatment in a constructed wetlands
 - D. potable, but should be tested periodically
12. Toilet room privacy is best exemplified by
- A. toilets in ancient Ephesus in Asia Minor
 - B. the modern street toilettes in Paris
 - C. the pop-up street toilets in London
 - D. all of the above
13. A toilet that exceeds code requirements is
- A. a waterless urinal
 - B. a dual-flush toilet
 - C. an incinerating toilet
 - D. all of the above
14. A composting toilet
- A. is unsuitable for institutional use
 - B. requires waterless urinals
 - C. needs vegetative scraps for the composting bin
 - D. all of the above
15. Paradise Creek's water quality is most impacted by its length of travel through
- A. forested uplands
 - B. cropland
 - C. pasture land
 - D. urban areas
16. The Sweet Avenue restoration project of Paradise Creek demonstrates
- A. lessening flood hazard
 - B. reducing parking lot run-off pollution
 - C. providing wildlife habitat
 - D. all of the above
17. Studies show that
- A. almost all of municipal solid waste can be recycled or composted
 - B. more than half of municipal solid waste can be recycled or composted
 - C. hardly any of municipal solid waste can be recycled or composted
 - D. less than half of municipal solid waste can be recycled or composted
18. Toxic wastes can be detoxified by
- A. bioremediation
 - B. aggressive recycling programs
 - C. photovoltaic treatment
 - D. all of the above



19. In order to heal worldwide environmental ills the built environment must be
- green
 - sustainable
 - net-zero energy
 - regenerative
20. The truly effective energy conserving design strategy employed by London City Hall (the GLA building) is
- the overhanging floor plates that self shade lower floors
 - the use of a spherical building envelope to reduce the wall surface to volume ratio
 - using bore hole cooling, which requires little energy
 - all of the above
21. London City Hall added a 67 KW photovoltaic array in 2007, which has
- made it a net zero energy building
 - reduced its carbon emissions
 - produced all its needed electricity
 - all of the above
22. The most cost-effective and primary means of reducing a building's carbon emissions is
- design for passive heating, cooling, and lighting
 - integrating photovoltaics and solar thermal technologies into the building design
 - buying green tag energy from the local utilities
 - all of the above
23. Architects and designers can get consulting services for energy-efficient and daylighted building design for no charge or a nominal fee from
- utility-supported energy centers
 - LEED accredited professionals
 - Architecture 2030
 - all of the above

24. Which of the following is not reflected in the market rate for energy and fuel
- A. a temporary shortage caused by storm damage
 - B. on-going exploration for new oil well sites
 - C. the need for a new generating plant in the next decade
 - D. all of the above
25. A earth-coupled heat pump claims a second law efficiency of 300%. How is this possible?
- A. It's not possible.
 - B. It uses high grade energy to gather low grade energy for space heating.
 - C. It only operates at off-peak hours.
 - D. It is extremely efficient and is solar-powered.
26. In the long-term the largest cost savings for a well-designed green building is
- A. energy savings
 - B. increased worker productivity
 - C. increased market value
 - D. lower first costs
27. A life cycle cost analysis graphic for the Benny Hill project in Montreal shows
- A. payback time for residents of less than 10 years
 - B. first costs and re-investment and maintenance costs
 - C. benefits that extend to the greater Montreal community
 - D. all of the above
28. LEED has accomplished market transformation in the green building industry
- A. by the advocacy of LEED standards by local and regional governments
 - B. through encouragement of manufacturers to provide green materials
 - C. via networking of building professionals through USGBC membership and events
 - D. all of the above
29. The tallest building in Europe, ComerzBank,
- A. uses natural ventilation
 - B. has operable windows
 - C. provides natural lighting to all office spaces
 - D. all of the above
30. Daylighting strategies used in decade-old European green architecture projects include
- A. moveable fritted glass louvres
 - B. narrow buildings with workstations near windows
 - C. extensive and appropriate external shading
 - D. all of the above