



Raven, Berg, Hassenzahl: Environment, 7th Edition
Chapter 14 Water

1. Around the world, about ____ people live without adequate access to water.
- a) 1.5 million
 - b) 10 million
 - c) 98 million
 - d) 1.1 billion
 - e) 5.2 billion

Ans: d

Difficulty: Easy

Response:

Chapter Opener; 14.0

2. Which of the following is not a proposal of the United Nations Development Program?
- a) individuals will be responsible to limiting their use of water
 - b) it will lower the cost of water
 - c) it will provide public financing for water infrastructure development
 - d) water access will be a part of broader poverty-reduction programs
 - e) water providers will be held responsible for consistency and safety

Ans: a

Difficulty: Easy

Response:

Chapter Opener; 14.0

3. We depend on water for:
- a) manufacturing
 - b) travel
 - c) energy production
 - d) mining
 - e) all of these

Ans: e

Difficulty: Easy

Response:

The Importance of Water; 14.1

4. Worldwide, freshwater use is:
- a) increasing because, on average, each person is using more water
 - b) decreasing because, on average, agriculture is conserving more water
 - c) decreasing due to the decline in the global population growth rate
 - d) decreasing due to improved technology and greater efficiency
 - e) relatively stable due to offsets between individual use and industrial conservation

Ans: a

Difficulty: Easy

Response:

The Importance of Water; 14.1

5. Water:
- a) is composed only of hydrogen atoms
 - b) is composed only of oxygen atoms
 - c) is composed of two atoms of oxygen and one atom of hydrogen
 - d) is composed of two atoms of hydrogen and one atom of oxygen
 - e) is composed of two atoms of helium and one atom of oxygen

Ans: d

Difficulty: Easy

Response:

Properties of Water; 14.1.1

6. The basis for most of water's physical properties is:
- a) its non-polar structure
 - b) the hydrogen bonds between adjacent molecules
 - c) ionic bonds
 - d) its status as a positive ion
 - e) all of these

Ans: b

Difficulty: Easy

Response:

Properties of Water; 14.1.1



7. Water:
- a) is a nonpolar molecule
 - b) is composed of helium and oxygen atoms
 - c) is a poor solvent
 - d) expands when it cools
 - e) freezes from the top down

Ans: e

Difficulty: Easy

Response:

Properties of Water; 14.1.1

8. Approximately _____ of the Earth's water is freshwater that can be readily used by humans and other terrestrial organisms.
- a) 0.1%
 - b) 2.5%
 - c) 10%
 - d) 25%
 - e) 50%

Ans: b

Difficulty: Easy

Response:

The Hydrologic Cycle and Our Supply of Fresh Water; 14.1.2

9. Most fresh water is present in the form of:
- a) water in lakes
 - b) ice caps and glaciers
 - c) water in rivers
 - d) groundwater
 - e) atmospheric water vapor

Ans: b

Difficulty: Easy

Response:

The Hydrologic Cycle and Our Supply of Fresh Water; 14.1.2



10. An area of land that is drained by a single river is called a/an:
- a) wetland
 - b) aquifer
 - c) watershed
 - d) drainage basin
 - e) both watershed and drainage basin

Ans: e

Difficulty: Easy

Response:

The Hydrologic Cycle and Our Supply of Fresh Water; 14.1.2

11. The upper limit of an unconfined underground reservoir of water is termed the:
- a) aquifer
 - b) water table
 - c) watershed
 - d) wetland
 - e) groundwater

Ans: b

Difficulty: Easy

Response:

The Hydrologic Cycle and Our Supply of Fresh Water; 14.1.2

12. The greatest use of fresh water is for:
- a) irrigation
 - b) industry
 - c) small businesses
 - d) homes
 - e) mining

Ans: a

Difficulty: Easy

Response:

Water Use and Resource Problems; 14.2

13. A flood plain describes the area bordering a river channel _____.
- a) where no building construction is allowed
 - b) that is likely to flood
 - c) that is flooded after a dam is constructed
 - d) where periodic floods remove nutrients from the soil
 - e) where plant cover should be removed to reduce flooding

Ans: b

Difficulty: Easy

Response:

Too Much Water; 14.2.1

14. When the Mississippi River flooded in 2008,
- a) it was the first time such floods affected Minnesota, Wisconsin, or Iowa
 - b) sandbags and levees prevented major damage
 - c) it was only the latest in a series of major floods along the river
 - d) wetlands prevented the water from receding quickly
 - e) it affected relatively few people

Ans: c

Difficulty: Easy

Response:

Too Much Water; Case in Point Floods of 2008; 14.2.2

15. Water problems are particularly severe in the:
- a) Pacific Northwest
 - b) American Southwest (Colorado River basin)
 - c) High Plains
 - d) Gulf Coast States
 - e) Upper Midwest

Ans: b

Difficulty: Easy

Response:

Surface Water; 14.3.1

16. Treated wastewater that is reused in some way is called:
- a) reclaimed water
 - b) household water
 - c) black water
 - d) secondhand water
 - e) xeriscaped water

Ans: a

Difficulty: Easy

Response:

Surface Water; 14.3.1

17. The largest groundwater deposit in the world is the:
- a) Great Lakes Aquifer.
 - b) Great Basin Aquifer
 - c) Rocky Mountain Aquifer
 - d) Ogallala Aquifer
 - e) Hell Creek Aquifer

Ans: d

Difficulty: Easy

Response:

Groundwater; 14.3.2



18. In many developing countries, individuals:
- a) utilize excessive amounts of water for irrigation
 - b) consume about 200 gallons of fresh water per day
 - c) have insufficient water to meet basic drinking and household needs
 - d) use the most current technology to increase their water use efficiency
 - e) rely on desalinization to provide the majority of their water needs

Ans: c

Difficulty: Easy

Response:

Drinking-Water Problems; 14.4.2

19. Which of the following countries do not face significant water supply challenges?
- a) United States
 - b) Iraq
 - c) China
 - d) Mexico
 - e) none; all of these countries face water supply challenges

Ans: e

Difficulty: Easy

Response:

Population Growth and Water Problems; 14.4.3

20. Artificial lakes in which water is stored for later use are called:
- a) cisterns
 - b) lakes
 - c) ponds
 - d) reservoirs
 - e) estuaries

Ans: d

Difficulty: Easy

Response:

Providing a Sustainable Water Supply; 14.5.1

21. The more than 100 dam impoundments along the Columbia River:
- a) generate electricity
 - b) control floods
 - c) adversely affect fish populations
 - d) supply municipal and industrial water to several major urban areas
 - e) all of these

Ans: e

Difficulty: Easy

Response:

Providing a Sustainable Water Supply; 14.5.1



22. Saltwater and saline groundwater can be made drinkable by humans and animals by a process called:
- a) trickle irrigation
 - b) boiling
 - c) salinization
 - d) reverse osmosis
 - e) osmosis

Ans: d

Difficulty: Easy

Response:

Providing a Sustainable Water Supply; 14.5.1

23. Desalinization is a particularly large industry in:
- a) Arizona
 - b) France
 - c) Russia
 - d) Saudi Arabia

Ans: d

Difficulty: Easy

Response:

Providing a Sustainable Water Supply; 14.5.1

24. Water that was already used in sinks, showers, and washing machines is called:
- a) gray water
 - b) black water
 - c) reclaimed water
 - d) treated water
 - e) municipal water

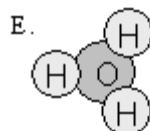
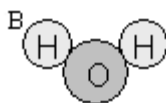
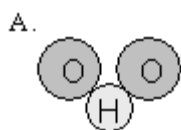
Ans: a

Difficulty: Easy

Response:

Reducing Municipal Water Waste; 14.6.3

25. Which of the following is an accurate representation of a water molecule?



- a) A
- b) B
- c) C
- d) D
- e) E

Ans: b

Difficulty: Medium

Response:

Properties of Water; 14.1.1

26. Which of the following is not a property of water?

- a) freezing point is 0°C (32°F)
- b) boiling point is 100°C (212°F)
- c) can be sublimated
- d) less dense as a solid than as a liquid
- e) less dense as a liquid than as a solid

Ans: d

Difficulty: Medium

Response:

Properties of Water; 14.1.1

27. Which of the following best describes groundwater?
- a) water flowing through permeable rocks and sediments
 - b) water found in underground lakes and rivers
 - c) water moving from precipitation over the ground to rivers and lakes
 - d) water that is completely independent of surface water
 - e) water found above the water table

Ans: a

Difficulty: Medium

Response:

The Hydrologic Cycle and Our Supply of Fresh Water; 14.1.2

28. Which of the following is the most effective way to reduce flood-related damage?
- a) creating exposed, barren hillsides by clear cutting woodlands
 - b) constructing new buildings
 - c) building expensive levees
 - d) restricting development on flood plains
 - e) paving new roads

Ans: d

Difficulty: Medium

Response:

Too Much Water; 14.2.1

29. The effects of flooding are more destructive today than in the past because:
- a) the use of levees has been determined to be an unsound engineering practice
 - b) retaining walls are too expensive to build in all of the appropriate locations
 - c) buildings are constructed on flood plains
 - d) soil with plant cover is ineffective in absorbing excess water
 - e) roads and buildings effectively absorb and slow water flow

Ans: c

Difficulty: Medium

Response:

Too Much Water; 14.2.1

30. Removing too much fresh water from a river or lake can:
- a) result in increasing salinity for associated estuaries
 - b) cause a local increase in bird populations due to an increase in available habitat
 - c) have little effect on associated wetland areas
 - d) increase the productivity of associated wetlands
 - e) reduce an area's precipitation

Ans: a

Difficulty: Medium

Response:

Too Little Water; 14.2.3

31. A flood plain has the potential to flood. Why is this a problem?
- a) floods are caused by drought cycles in the weather
 - b) floods are unnatural events caused by human activity
 - c) flood damage is permanent, causing major changes in the course of the bordering river channel
 - d) flood damage is extremely costly due to homes and businesses being built on the flood plain
 - e) when flood waters recede, the flood plain is left infertile for growing crops

Ans: d

Difficulty: Medium

Response:

Too Much Water; 14.2.1

32. Flooding of the Mississippi River basin in 2008 was caused or exacerbated by all of the following except:
- a) several months of unusually heavy precipitation
 - b) levees that failed to hold back floodwaters
 - c) draining wetlands
 - d) faulty dams upstream of major flooding areas
 - e) building on flood plains

Ans: d

Difficulty: Medium

Response:

Case In Point: The Floods of 2008; 14.2.2



33. Excessive removal of groundwater can result in:
- a) rising water tables
 - b) sinkhole formation
 - c) groundwater desalinization
 - d) increased discharge to streams

Ans: b

Difficulty: Medium

Response:

Too Little Water; 14.2.3

34. Which of the following does not contribute to water shortages in the American Southwest?
- a) climate change leading to reduced snowfall in the Rocky Mountains
 - b) growing demand for municipal, commercial, and industrial uses
 - c) arid or semiarid climate with limited precipitation
 - d) aqueducts transporting water from distant sources
 - e) growing populations in cities such as Phoenix, Las Vegas, and Salt Lake City.

Ans: d

Difficulty: Medium

Response:

Surface Water; 14.3.1

35. Which of the following does not describe Mono Lake, CA?
- a) the lake is naturally fed by rivers and streams originating the Sierra Nevada mountains
 - b) evaporation is the only natural outflow from the lake
 - c) water diversions to Los Angeles resulted in increasing lake salinity
 - d) an agreement was reached to allow Mono Lake to return to its original volume
 - e) the number of migratory birds on the lake's shores is expected to increase over the next decade

Ans: d

Difficulty: Medium

Response:

Surface Water ;14.3.1



36. A 2008 study by researchers at the Scripps Institution of Oceanography predicts climate change over the next 50 years will result in:
- a) flow in the Colorado River decreasing by 10-30%
 - b) flow in the Colorado River increasing due to warmer and wetter air masses
 - c) Lake Mead being unable to supply water to San Francisco
 - d) Hoover Dam producing 10% less electricity

Ans: a
 Difficulty: Medium
Response:
 Surface Water; 14.3.1

37. Based on the table below, the most water is used in _____ for _____.

<i>Water Usage (in cubic kilometers), mid-1990's</i>			
Region	Irrigation	Industry	Domestic / Municipal
Africa	127.7	7.3	10.2
Asia	1388.8	147.0	98.0
Australia-Oceania	5.7	0.3	10.7
Europe	141.1	250.4	63.7
North and Central America	298.1	255.5	54.8
South America	62.7	24.4	19.1
World Total	2024.1	684.9	256.5
World Total, as Percent	68.3	23.1	8.6

- a) Asia, Domestic/Municipal
- b) Asia, Industry
- c) Asia, Irrigation
- d) Europe, Industry
- e) North and Central America, Irrigation

Ans: c
 Difficulty: Medium
Response:
 Global Water Problems; 14.4



38. Complete the following analogy:
Dam is to _____ as levee is to _____.
- a) xeriscaping / hydroponics
 - b) electricity / natural gas
 - c) reservoir / flood plain
 - d) stable runoff / reclaimed water
 - e) aquifer / drainage basin

Ans: c

Difficulty: Medium

Response:

Providing a Sustainable Water Supply; 14.5.1

39. Which of the following have a vested interest in resolving the water rights controversy along the Missouri River?
- a) farmers
 - b) Native Americans
 - c) recreational and tourism groups
 - d) hydroelectric producers
 - e) all have a vested interest

Ans: e

Difficulty: Medium

Response:

Providing a Sustainable Water Supply; 14.5.1

40. One way to make agricultural water more sustainable is through:
- a) water diversion
 - b) “use it or lose it” water allotments for farmers
 - c) international water swaps
 - d) plot flooding
 - e) microirrigation

Ans: e

Difficulty: Medium

Response:

Reducing Agricultural Water Waste; 14.6.1



41. Cities are encouraging individual water conservation by:
- a) including water charges in the rent
 - b) providing economic incentives for installing water saving household fixtures
 - c) repairing city water mains and pipes to improve “water accountability”
 - d) collecting and storing rain water for redistribution to individuals
 - e) decreasing the price of water

Ans: b

Difficulty: Medium

Response:

Reducing Municipal Water Waste; 14.6.3

42. All of the following are successful motivators for consumers to conserve water except:
- a) water rationing
 - b) increased water prices
 - c) all of these are true
 - d) effective education

Ans: a

Difficulty: Medium

Response:

Reducing Municipal Water Waste; 14.6.3

43. The average U.S. citizen can conserve water by:
- a) washing dishes by hand instead of using the dishwasher
 - b) xeriscaping the entire lawn
 - c) taking 15-minute showers
 - d) washing only full loads of clothes
 - e) adding bricks to the toilet tank

Ans: d

Difficulty: Medium

Response:

Reducing Municipal Water Waste; 14.6.3

44. All of the following represent ways in which individuals can reduce water consumption except:
- a) using a dishwasher
 - b) washing many small loads of laundry
 - c) installing low-flow showerheads
 - d) installing low-flush toilets
 - e) turning the faucet off while brushing teeth

Ans: b

Difficulty: Medium

Response:

Reducing Municipal Water Waste; 14.6.3