Environmental Science Practice

Use this key to check answers and read the explanations.

1. In a diagram of Earth's systems, which sphere includes the liquid water in both a freshwater lake and the ocean?

A. Hydrosphere
B. Atmosphere
C. Biosphere
D. Geosphere

Correct answer: A. Hydrosphere

The hydrosphere includes liquid water at Earth's surface and underground. Lakes and oceans are both part of it.

2. A cross section shows an underground layer of sand and gravel that stores groundwater and lets it flow through connected spaces. What is that water-bearing layer called?

A. A surface floodplain
B. A reservoir behind a dam
C. An aquifer
D. A drainage divide

Correct answer: C. An aquifer

An aquifer is a water-bearing layer of rock or sediment that can transmit groundwater through pores or cracks.

3. A map highlights the strip of land directly alongside a river, including its banks and streamside plants. What is this strip called?

A. The riverbed
B. The riparian zone
C. The open-water zone
D. The headwaters

Correct answer: B. The riparian zone

The riparian zone lies along the river channel and includes its banks and plants adapted to the streamside setting.

4. Which purchasing choice reduces packaging waste at the source for a school receiving the same books?

A. Receive the same amount of compostable packaging and compost it.
B. Receive the same amount of packaging and recycle it.
C. Receive the same amount of packaging and send it to landfill.
D. Choose a shipment that leaves off unnecessary individual wrappers.

Correct answer: D. Choose a shipment that leaves off unnecessary individual wrappers.
Leaving off unnecessary wrapping prevents that waste from being generated. Recycling handles materials after they have already been used.

5. Which fictional observation shows a single, identifiable point where polluted water enters a stream?

A. Runoff reaches the stream along the edge of several fields.
B. Polluted water enters the stream from one visible outlet pipe.
C. Loose soil washes off many separate garden plots.
D. Rain carries residues off a long stretch of ground at many places.

Correct answer: B. Polluted water enters the stream from one visible outlet pipe.
The outlet pipe provides an identifiable discharge point. The other examples describe water or sediment moving from dispersed areas.

6. A model park has two woods separated by open ground. For an animal that moves through tree cover, which planting plan creates a continuous habitat corridor between the woods?

A. A strip of trees that joins both woods
B. A strip connected to one wood that ends before reaching the other
C. A patch of trees that touches neither wood
D. Extra trees inside each wood with the gap left open

Correct answer: A. A strip of trees that joins both woods
A habitat corridor links separate patches. A continuous strip joining the woods supplies tree cover along the whole route between them.

7. On a fictional morning, cool air lies beneath warmer air and there is little wind. Near-ground pollutant readings rise even though emissions stay steady. How can the temperature inversion help explain this?

A. It causes an equal rise in pollutant concentration at every height.
B. It increases vertical mixing and carries pollutants quickly upward.
C. It concentrates pollutants mainly above the warmer layer.
D. It limits vertical mixing, so pollutants linger near the ground.

Correct answer: D. It limits vertical mixing, so pollutants linger near the ground.
Air mixes less readily across an inversion. Pollutants released near the ground can build up when there is little movement to disperse them.

8. A monitoring record notes that acidic substances carried in the air reach a hillside in rain. Which process describes their transfer from the atmosphere to the hillside?

A. Evaporation
B. Dry deposition
C. Wet deposition
D. Infiltration

Correct answer: C. Wet deposition
When precipitation carries acidic substances to the ground, the transfer is wet deposition. In dry deposition, gases or particles reach surfaces without precipitation.

9. Two fictional reservoir samples have the same measured salt concentration. One looks cloudier and scatters more light. Which measurement would be higher for the cloudier sample?

A. Turbidity
B. Salinity
C. Water temperature
D. Dissolved oxygen

Correct answer: A. Turbidity
Turbidity tracks how strongly a sample scatters light and is an indicator of clarity. Cloudier water has higher turbidity.

10. In a fictional estuary, a sample near a freshwater river has lower salinity than a sample near the ocean entrance taken at the same time. Which explanation best fits the locations?

A. Both sites contain the same proportions of freshwater and seawater.
B. Freshwater adds more dissolved salt than seawater does.
C. Seawater dilutes the salt closer to the ocean.
D. Freshwater dilutes the salt closer to the river.

Correct answer: D. Freshwater dilutes the salt closer to the river.
River water is less salty than seawater. Their mixture usually has lower salinity near the freshwater inflow and higher salinity near the ocean.

11. A fictional aquifer gains 64 million liters of water per year. It loses 17 million liters to streams and 5 million liters to a neighboring aquifer. Assume pumping is the only other flow and all listed flows stay fixed. What yearly pumping volume keeps stored water unchanged in this model?

A. 59 million liters
B. 47 million liters
C. 42 million liters
D. 86 million liters

Correct answer: C. 42 million liters

For stored water to stay constant, annual inflow and outflow must match. After the two fixed losses, 64 minus 17 minus 5 leaves 42 million liters for pumping.

12. In a fictional model, Stream A carries 9 milligrams of suspended sediment per liter at 4 liters per second. Stream B carries 5 milligrams per liter at 9 liters per second. Which stream carries more sediment past its monitoring point each second, and by how much?

A. Stream A, by 9 milligrams per second
B. Stream B, by 9 milligrams per second
C. Stream A, by 4 milligrams per second
D. The streams carry equal amounts per second.

Correct answer: B. Stream B, by 9 milligrams per second

Multiply concentration by flow. A carries 9 × 4 = 36 milligrams per second, and B carries 5 × 9 = 45. The difference is 9 milligrams per second.

13. Two fictional cafeterias count recycling and composting as diversion and landfill the rest. A generates 120 kg, recycles 76 kg, and composts 32 kg. B generates 60 kg, recycles 36 kg, and composts 15 kg. Which cafeteria diverts a larger share, and which sends less to landfill?

A. B diverts a larger share, and B sends less to landfill.
B. A diverts a larger share, and A sends less to landfill.
C. B diverts a larger share, and A sends less to landfill.
D. A diverts a larger share, and B sends less to landfill.

Correct answer: D. A diverts a larger share, and B sends less to landfill.

A diverts 108 of 120 kg, or 90%, and landfills 12 kg. B diverts 51 of 60 kg, or 85%, and landfills 9 kg.

14. A fictional park model gives each lighting plan two readings in the same units, first on the path and then beyond its edge. A gives (9, 1), B (13, 3), C (14, 8), and D (12, 5). Which plan keeps the path reading at least 12 while minimizing light beyond the edge?

A. Plan B
B. Plan A
C. Plan C
D. Plan D

Correct answer: A. Plan B
A misses the path requirement. B, C, and D meet it, and B has the lowest edge reading among those three.

15. Two fictional stream sites have the same dissolved oxygen reading on one day. Across several visits in the same season, observers using the same methods find stress-sensitive bottom-dwelling invertebrates at A. They find only more tolerant groups at B. Which conclusion fits the records?

A. The invertebrate records identify a specific pollutant at B.
B. The matching oxygen readings establish that both sites have identical conditions over time.
C. Site B's repeated results warrant a closer look for possible environmental stress.
D. The sensitive groups observed at A establish that A experiences zero environmental stress.

Correct answer: C. Site B's repeated results warrant a closer look for possible environmental stress.
Many bottom-dwelling invertebrates live in the water long enough to reflect conditions beyond a single reading. The difference at B supports further review, and identifying a cause would require more evidence.