

Chapter 02 Life on Land

Multiple Choice Questions

1. A biome is characterized primarily by
- A. flora and fauna.
 - B. temperature and moisture.
 - C.** climate and predominate plant types.
 - D. global weather patterns.
 - E. None of the choices are correct.

Bloom's Level: 2. Understand
Learning Outcome: 02.03.02 Describe the climatic differences among the biomes.
Section: 02.03
Topic: Biomes and Ecosystems

2. Earth's climatic variation is due to
- A. the spherical shape of the earth.
 - B. earth's axial rotation as it orbits the sun.
 - C. uneven heating of the earth's surface.
 - D.** All of the choices are correct.
 - E. None of the choices are correct.

Bloom's Level: 2. Understand
Learning Outcome: 02.01.02 Define biome.
Section: 02.01
Topic: Biomes and Ecosystems

3. Which of the following soil horizon profiles is ordered correctly?
- A. A, B, C, O
 - B.** O, A, B, C
 - C. O, B, A, C
 - D. C, B, O, A
 - E. None of the choices are correct.

Bloom's Level: 2. Understand
Learning Outcome: 02.02.01 Draw a soil profile, including typical soil horizons.
Section: 02.02
Topic: Biomes and Ecosystems

Chapter 02 - Life on Land

4. Coriolis effect causes winds in the
- A. Northern Hemisphere to deflect to the left.
 - B.** Northern Hemisphere to deflect to the right.
 - C. Southern Hemisphere to deflect to the right.
 - D. Northern and Southern Hemispheres to deflect to the left.
 - E. Northern and Southern Hemispheres to deflect to the right.

Bloom's Level: 2. Understand

Learning Outcome: 02.01.04 Explain the influence of the Coriolis effect on wind direction.

Section: 02.01

Topic: Biomes and Ecosystems

5. All of the following statements concerning wind are true **except**:
- A.** northeast trade winds blow toward the poles.
 - B. southeast trade winds blow toward the equator.
 - C. polar easterlies blow toward the equator.
 - D. westerlies blow toward the south pole in the southern hemisphere.
 - E. westerlies blow toward the north pole in the northern hemisphere.

Bloom's Level: 2. Understand

Learning Outcome: 02.01.04 Explain the influence of the Coriolis effect on wind direction.

Section: 02.01

Topic: Biomes and Ecosystems

6. Warm tropical air
- A. is dense and sinks.
 - B. has a low evaporative potential.
 - C.** cools as it ascends.
 - D. warms as it ascends.
 - E. meets cool polar air causing precipitation in the tropics.

Bloom's Level: 2. Understand

Learning Outcome: 02.01.02 Define biome.

Section: 02.01

Topic: Biomes and Ecosystems

Chapter 02 - Life on Land

7. All of the following statements are true **except**:
- A. A horizon: mixture of organic and mineral materials.
 - B. B horizon: deposition of clay and humus.
 - C. C horizon: weathered parent material.
 - D. O horizon: organic layer.
 - E.** All of the choices are correct.

Bloom's Level: 2. Understand

Learning Outcome: 02.02.02 Describe the characteristics of each of the typical soil horizons.

Section: 02.02

Topic: Biomes and Ecosystems

8. Heating of the earth's surface causes
- A. cool air to rise and warm air to sink.
 - B.** warm air to rise and cool air to sink.
 - C. warm and cool air to condense.
 - D. warm and cool air to mix.
 - E. None of the choices are correct.

Bloom's Level: 2. Understand

Learning Outcome: 02.01.02 Define biome.

Section: 02.01

Topic: Biomes and Ecosystems

9. Which soil horizon is most influenced by climate?
- A. A
 - B. B
 - C. C
 - D.** O
 - E. All are equally influenced.

Bloom's Level: 1. Remember

Learning Outcome: 02.02.03 Discuss how climate, organisms, topography, parent material, and time can influence soil development and structure.

Section: 02.02

Topic: Biomes and Ecosystems

Chapter 02 - Life on Land

10. Which of the following terrestrial biomes are maintained by fires?

- A. tropical dry forests
- B. temperate forests and mountains
- C. Mediterranean woodlands and shrublands
- D. tropical savannas and temperate grasslands**
- E. boreal forests and tundra

Bloom's Level: 2. Understand

Learning Outcome: 02.03.02 Describe the climatic differences among the biomes.

Section: 02.03

Topic: Biomes and Ecosystems

11. There are(is) _____ convective air cell(s) per hemisphere, _____ total for the earth.

- A. 1; 2
- B. 2; 4
- C. 3; 6**
- D. 4; 8
- E. 5; 10

Bloom's Level: 4. Analyze

Learning Outcome: 02.01.02 Define biome.

Section: 02.01

Topic: Biomes and Ecosystems

12. Climatic diagrams provide all of the following information **except**:

- A. wind patterns.**
- B. average minimum temperature above and below 0°C.
- C. temperature and precipitation variations.
- D. wet and dry season durations.
- E. None of the choices are correct.

Bloom's Level: 5. Evaluate

Learning Outcome: 02.01.03 Interpret a climate diagram.

Section: 02.01

Topic: Biomes and Ecosystems

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13. Most of the earth's deserts are
- A. located at 0°latitude.
 - B.** located at 30°north and south latitudes.
 - C. located at 60°north and south latitudes.
 - D. located at 90°north and south latitudes.
 - E. randomly scattered around the earth's surface.

Bloom's Level: 2. Understand
Learning Outcome: 02.03.02 Describe the climatic differences among the biomes.
Section: 02.03
Topic: Biomes and Ecosystems

14. The Northern and Southern Hemispheres receive approximately equal amounts of solar radiation on the
- A. spring equinox.
 - B. northern summer solstice.
 - C. autumnal equinox.
 - D. southern winter solstice.
 - E.** both spring equinox and autumnal equinox.

Bloom's Level: 2. Understand
Learning Outcome: 02.01.01 Describe how natural history has helped with restoration of tropical dry forest in Costa Rica.
Section: 02.01
Topic: Biomes and Ecosystems

15. Tropical dry forests are located between
- A. 0° and 10° north and south latitudes.
 - B. 0° and 25° south latitude.
 - C.** 10° and 25° north and south latitudes.
 - D. 10° and 25° south latitude.
 - E. None of the choices are correct.

Bloom's Level: 2. Understand
Learning Outcome: 02.03.02 Describe the climatic differences among the biomes.
Section: 02.03
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16. All of the following statements are true **except**:
- A. Tropical rain forests are continuously warm and wet.
 - B. Tropical dry forests have rainy and dry seasons.
 - C. In a desert, evaporation exceeds precipitation.
 - D.** Taigas have moderate temperatures with occasional droughts.
 - E. Tundras are cold and dry.

Bloom's Level: 5. Evaluate

Learning Outcome: 02.03.02 Describe the climatic differences among the biomes.

Section: 02.03

Topic: Biomes and Ecosystems

17. All of the following components influence soil structure **except**:
- A. age.
 - B. parent material.
 - C. climate.
 - D. organisms.
 - E.** None of the choices are correct.

Bloom's Level: 2. Understand

Learning Outcome: 02.02.03 Discuss how climate, organisms, topography, parent material, and time can influence soil development and structure.

Section: 02.02

Topic: Biomes and Ecosystems

18. Atmospheric circulation and precipitation patterns are influenced by which of the following?
- A. rising and sinking of warm and cool air masses
 - B. uneven heating of the earth's surface and atmosphere by the sun
 - C. differential ability of cool and warm air masses to hold water vapor
 - D. Coriolis effect
 - E.** All of the choices are correct.

Bloom's Level: 2. Understand

Learning Outcome: 02.01.02 Define biome.

Section: 02.01

Topic: Biomes and Ecosystems

19. The _____ is a depositional horizon that contains clays, humus, and other materials which may form distinct banding patterns.

- A. A horizon
- B. B horizon**
- C. C horizon
- D. D horizon
- E. O horizon

Bloom's Level: 2. Understand

Learning Outcome: 02.02.02 Describe the characteristics of each of the typical soil horizons.

Section: 02.02

Topic: Biomes and Ecosystems

20. Which of the following is true for the Palmer Drought Severity Index?

- A. It uses temperature and precipitation to calculate moisture conditions relative to long-term averages.
- B. Negative values reflect drought conditions.
- C. Values near zero reflect average rainfall conditions.
- D. It demonstrates both temporal and spatial climatic variation.
- E. All of the choices are correct.**

Bloom's Level: 5. Evaluate

Learning Outcome: 02.Applications.02 Describe the Palmer Drought Severity Index.

Section: Applications

Topic: Biomes and Ecosystems

21. Which of the following is not a characteristic of the boreal forest?

- A. dominated by evergreen conifers such as spruce and fir
- B. home to moose and migratory caribou
- C. sparse plant cover**
- D. thick layer of plant litter that ties up nutrients
- E. low fertility, thin, acidic soil

Bloom's Level: 2. Understand

Learning Outcome: 02.03.04 Describe the types of vegetation, animals, and other organisms characteristic of the terrestrial biomes.

Section: 02.03

Topic: Biomes and Ecosystems

22. Which of the following biomes have fertile soils that contain large quantities of organic matter?

- A. tropical rain forest
- B. temperate forest
- C. temperate grassland
- D. All of the choices are correct.
- E.** both temperate forest and temperate grassland

Bloom's Level: 2. Understand

Learning Outcome: 02.03.03 Contrast the soils typical of the terrestrial biomes.

Section: 02.03

Topic: Biomes and Ecosystems

True / False Questions

23. Mycorrhizae are parasitic fungi that are depleting tropical trees of nutrients.

FALSE

Bloom's Level: 2. Understand

Learning Outcome: 02.03.04 Describe the types of vegetation, animals, and other organisms characteristic of the terrestrial biomes.

Section: 02.03

Topic: Biomes and Ecosystems

24. As altitude increases, temperatures decrease, likewise, as latitude decreases, temperatures decrease.

FALSE

Bloom's Level: 2. Understand

Learning Outcome: 02.03.02 Describe the climatic differences among the biomes.

Section: 02.03

Topic: Biomes and Ecosystems

25. Trade winds move toward the equator.

TRUE

Bloom's Level: 1. Remember

Learning Outcome: 02.01.04 Explain the influence of the Coriolis effect on wind direction.

Section: 02.01

Topic: Biomes and Ecosystems

26. In general, warm air can hold more moisture than cool air and therefore has a stronger evaporative effect.

TRUE

Bloom's Level: 2. Understand

Learning Outcome: 02.01.02 Define biome.

Section: 02.01

Topic: Biomes and Ecosystems

27. The dispersal of the quanacaste tree's (*Enterolobium cyclocarpum*) seeds was performed by herbivores that have since become extinct; consequently, the tree is now on the verge of extinction.

FALSE

Bloom's Level: 2. Understand

Learning Outcome: 02.00.01 Describe how natural history has helped with restoration of tropical dry forest in Costa Rica.

Section: 02.00

Topic: Biomes and Ecosystems

28. The precipitation in moist temperate regions is caused by the meeting of cool polar air and warm subtropical air.

TRUE

Bloom's Level: 2. Understand

Learning Outcome: 02.01.02 Define biome.

Section: 02.01

Topic: Biomes and Ecosystems

29. Environments located at low latitudes at high elevations have similar climates as those environments located at high latitudes.

TRUE

Bloom's Level: 2. Understand
Learning Outcome: 02.03.02 Describe the climatic differences among the biomes.
Section: 02.03
Topic: Biomes and Ecosystems

30. Proximity to large bodies of water moderates terrestrial temperatures.

TRUE

Bloom's Level: 2. Understand
Learning Outcome: 02.03.02 Describe the climatic differences among the biomes.
Section: 02.03
Topic: Biomes and Ecosystems

31. In the region between the tropics of Cancer and Capricorn, seasonal variations in temperature and day length at low elevation are slight.

TRUE

Bloom's Level: 2. Understand
Learning Outcome: 02.01.01 Describe how natural history has helped with restoration of tropical dry forest in Costa Rica.
Section: 02.01
Topic: Biomes and Ecosystems

32. A sample mean is a statistical estimate of the true population mean.

TRUE

Bloom's Level: 1. Remember
Learning Outcome: Analyze and Interpret Data.
Section: Investigating the Evidence
Topic: Biomes and Ecosystems

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Fill in the Blank Questions

33. Desert soils are often termed _____.

lithosols

Bloom's Level: 1. Remember

Learning Outcome: 02.03.03 Contrast the soils typical of the terrestrial biomes.

Section: 02.03

Topic: Biomes and Ecosystems

34. Warm light air rises over the equator and moves _____.

poleward

Bloom's Level: 1. Remember

Learning Outcome: 02.01.02 Define biome.

Section: 02.01

Topic: Biomes and Ecosystems

35. Irrigation of desert soils could lead to the formation of _____.

caliches

Bloom's Level: 2. Understand

Learning Outcome: 02.03.03 Contrast the soils typical of the terrestrial biomes.

Section: 02.03

Topic: Biomes and Ecosystems