

## **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*

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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*

*Topic: Biomes and Ecosystems*

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*

## Chapter 02 - Life on Land

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*