

Chapter 42 Practice

Multiple Choice

Identify the choice that best completes the statement or answers the question.

- _____ 1. The amount of solar energy that any spot on the surface of the Earth receives is controlled by the
 - a. photoperiod or duration of light.
 - b. angle at which the sun strikes the Earth.
 - c. amount of atmosphere above the spot.
 - d. particulate matter and pollution in the atmosphere.
 - e. all of these

- _____ 2. The tradewinds in the zone from 0 to 30 degrees north latitude are generally from the
 - a. north.
 - b. northwest.
 - c. northeast.
 - d. southeast.
 - e. southwest.

- _____ 3. Which factor has the least effect on the amount of incoming light that strikes an area?
 - a. latitude
 - b. temperature
 - c. the degree that a slope is exposed to the incoming light
 - d. the amount of recurring cloud cover
 - e. all of these

- _____ 4. The atmosphere above which region has a thinning or "hole" in the ozone layer?
 - a. Antarctica
 - b. Eastern North America
 - c. Northern Europe
 - d. the western Pacific
 - e. Sahara Desert

- _____ 5. Which pesticide is an even more potent ozone destroyer than CFCs?
 - a. DDT
 - b. malathion
 - c. methyl bromide
 - d. toluene
 - e. none of these

- _____ 6. How many ozone molecules can be destroyed by the chlorine released by one CFC?
 - a. 0
 - b. 1
 - c. 2
 - d. 4
 - e. over 10,000

- _____ 7. A thermal inversion refers to
 - a. an abnormal occurrence not predicted by meteorologists.
 - b. an Indian summer.
 - c. an unusually quick change in weather patterns.
 - d. the process of cool air drainage at night.
 - e. a layer of cool air trapped underneath a warm air blanket.

- _____ 8. When the burning of fossil-fuels in manufacturing plants gives off particulates and sulfur oxides, we have
- photochemical smog.
 - industrial smog.
 - a thermal inversion.
 - both photochemical smog and a thermal inversion.
 - both industrial smog and a thermal inversion.
- _____ 9. Which factor is NOT characteristic of a city primarily plagued by industrial smog?
- high concentration of sulfur oxides
 - dependence on fossil fuel for manufacturing
 - cold, wet winters
 - dust, smoke, and soot are present
 - high concentration of nitrogen oxides
- _____ 10. Which factor is NOT characteristic of a city primarily plagued by photochemical smog?
- high concentration of sulfur oxides
 - high concentration of nitrogen oxides
 - significant amounts of PANs
 - large numbers of internal combustion engines
 - warm climates
- _____ 11. Each of the following contributes to acid rain EXCEPT
- ozone.
 - waste products from the burning of coal.
 - nitrogen fertilizers.
 - gasoline burning automobiles.
 - gas burning power plants.
- _____ 12. Which acid is a severe air pollutant?
- carbonic acid
 - nitric acid
 - hydrofluoric acid
 - hydrochloric acid
 - boric acid
- _____ 13. What portion of the Earth's surface is covered by oceans?
- less than 10 percent
 - more than 80 percent
 - about 50 percent
 - approximately 70 percent
 - barely 20 percent
- _____ 14. Mountains produce
- rain shadows on the windward sides.
 - precipitation on the leeward sides.
 - deserts on the leeward sides.
 - extensive grasslands on the windward sides.
 - all of these

- _____ 15. A wind system that influences large climatic regions and reverses direction seasonally, producing dry and wet seasons, is referred to as
- a. a geothermal ecosystem.
 - b. an upwelling.
 - c. a taiga.
 - d. a monsoon.
 - e. a hurricane.
- _____ 16. Which of the following factors is most important in determining the type of biomes found in a particular region?
- a. soil type
 - b. light intensity
 - c. temperature
 - d. type of animals in the region
 - e. type of plants in the area
- _____ 17. A particular biome is characterized by
- a. climate.
 - b. vegetation.
 - c. animals.
 - d. vegetation and animals only.
 - e. climate, vegetation, and animals.
- _____ 18. The biome most in danger of desertification is
- a. desert.
 - b. grassland.
 - c. deciduous forest.
 - d. tropical rain forest.
 - e. taiga.
- _____ 19. Most desert biomes are in close proximity to what other biome?
- a. tundra
 - b. grasslands
 - c. deciduous forests
 - d. evergreen forests
 - e. tropical rain forest
- _____ 20. The biome that is currently increasing in size most rapidly is
- a. tundra.
 - b. taiga.
 - c. tropical rain forest.
 - d. desert.
 - e. grassland.
- _____ 21. Fire in the dry shrublands does not kill the small bushy plants most probably because
- a. the plants have a tough protective bark.
 - b. the leaves are very heavy and wet.
 - c. there is not much to "feed" the fire and thus it moves rapidly through the area.
 - d. humans live close by and have fire-fighting equipment.
 - e. all of these

- _____ 22. The biome with the greatest amount of topsoil and the richest, most fertile soil is
- tundra.
 - taiga.
 - tropical rain forest.
 - desert.
 - grassland.
- _____ 23. The Dust Bowl of the 1930s was the result of destruction of
- desert.
 - chaparral.
 - tallgrass prairie.
 - shortgrass prairie.
 - temperate deciduous forest.
- _____ 24. Which of the following biomes would support and be characterized by the greatest number and diversity of herbivores?
- tundra
 - taiga
 - grassland
 - chaparral
 - desert
- _____ 25. The biome most closely associated with fire (and later, mudslides) is the
- desert.
 - tropical rain forest.
 - chaparral (dry shrublands).
 - temperate deciduous forest.
 - taiga.
- _____ 26. In tropical rain forests,
- competition for available sunlight is intense.
 - diversity is limited because the tall forest canopy shuts out most of the incoming light.
 - conditions are extremely favorable for growing luxuriant food crops.
 - there is little competition for resources.
 - habitat partitioning is minimal.
- _____ 27. In which biome is plant and animal life greatly "layered"?
- tundra
 - taiga
 - tropical rain forest
 - desert
 - grassland
- _____ 28. The removal of trees from tropical rain forest for the purpose of large-scale food crop agriculture is not recommended because
- the soil is poor in organic nutrients.
 - erosion rates accelerate when trees are removed.
 - the soil has few decomposers.
 - the soil is poor in organic nutrients and erosion increases when trees are removed.
 - the soil is poor in organic nutrients and the soil has few decomposers.

- _____ 29. Which biome is characterized by plants whose leaves drop off in the wintertime?
- a. coniferous forest
 - b. tundra
 - c. temperate deciduous forest
 - d. tropical rain forest
 - e. all of these
- _____ 30. The largest biome in North America is the
- a. taiga (evergreen coniferous).
 - b. tundra.
 - c. temperate grassland.
 - d. temperate deciduous forest.
 - e. chaparral (shrublands).
- _____ 31. Evergreen trees are found in the
- a. tropics.
 - b. temperate zones.
 - c. taiga.
 - d. temperate zones and taiga only.
 - e. tropics, temperate zones, and taiga.
- _____ 32. Which biome is a treeless plain that occurs around the Arctic Circle?
- a. chaparral
 - b. taiga
 - c. desert
 - d. grassland
 - e. tundra
- _____ 33. Permafrost and low rainfall are characteristic of which biome?
- a. boreal forest
 - b. montane coniferous forest
 - c. tundra
 - d. evergreen coniferous forest
 - e. temperate deciduous forests
- _____ 34. Which of the following would be the least suitable for conversion to agriculture?
- a. grassland
 - b. tropical forests
 - c. deciduous forest
 - d. prairie
 - e. silted in lake
- _____ 35. Freshwater lakes will turn over in the
- a. fall.
 - b. winter.
 - c. spring.
 - d. summer.
 - e. both fall and spring.

- _____ 36. The profundal zone is characterized by
- plankton.
 - algae.
 - plants and animals.
 - decomposers.
 - all of these
- _____ 37. A lake in which minerals are scarce is
- profundal.
 - oligotrophic.
 - eutrophic.
 - benthic.
 - pelagic.
- _____ 38. Estuaries often exhibit a great degree of species diversity because
- saltwater and freshwater species are present.
 - many species of the open ocean spend a portion of their life cycles in estuarine waters.
 - there is a continued upwelling of nutrients.
 - saltwater and freshwater species are present plus many species of the open ocean spend a portion of their life cycles in estuarine waters.
 - saltwater and freshwater species are present and there is a continued upwelling of nutrients.
- _____ 39. What symbiotic organisms do corals lose during bleaching?
- coralline algae
 - dinoflagellates
 - diatoms
 - green algae
 - red algae
- _____ 40. Which zone of the ocean is found above the continental shelf?
- abyssal
 - benthic
 - pelagic
 - neritic
 - oceanic
- _____ 41. The Galápagos Rift is a geothermal ecosystem 2,500 meters beneath the ocean's surface that has which of the following as its primary producers?
- blue-green algae
 - protistans
 - nitrogen-fixing organisms
 - chemosynthetic organisms
 - vascular plants
- _____ 42. During El Niño,
- warm, nutrient poor water replaces colder nutrient rich water.
 - warm, nutrient rich water replaces colder nutrient poor water.
 - cold, nutrient poor water replaces warmer nutrient rich water.
 - cold, nutrient poor water replaces warmer nutrient rich water.
 - none of these

- _____ 43. Four of the five answers below are related by inclusion in the same type of biome. Select the exception.
- shortgrass prairie
 - monsoon grassland
 - savanna
 - chaparral
 - tallgrass prairie
- _____ 44. Four of the five answers listed below are related by a common biome. Select the exception.
- no trees
 - permafrost
 - short growing seasons
 - found in the rain shadows
 - may be found above the Arctic Circle or at the top of mountains
- _____ 45. Four of the five answers listed below are related by a similar habitat. Select the exception.
- neritic zone
 - littoral zone
 - benthic province
 - pelagic province
 - abyssal zone

Matching

Choose the one most appropriate answer for each.

- major constituents of acid precipitation
 - a pesticide with ozone damaging capabilities
 - Steinbeck and Michener lamented their disruption
 - mosaics of tall, coarse grasses, shrubs, and low trees, even humid forests; rainfall varies
 - shallow area near lakeshores
 - buffalo, Indians, and future fields of corn and wheat
 - includes sediments and rocks of ocean bottom
 - refrigerants and propellants that damage the ozone layer
 - stratified communities with vines, orchids, and monkeys
 - where hot water spews from fissures in the sea floor
 - large daily temperature fluctuations; prickly pear cacti, ocotillo
 - dwarf willows, mosses, lichens, caribou, and lemmings
 - Spartina*, eelgrass, and diatoms
 - a large region characterized by its large array of dominant primary producers
 - Southern Appalachian mountains; moderate rain, cold snowy winters; deer kept in check by hunters
- _____ 46. benthic province
- _____ 47. biome
- _____ 48. chlorofluorocarbons
- _____ 49. hydrothermal vents
- _____ 50. estuary
- _____ 51. savanna
- _____ 52. shortgrass prairie
- _____ 53. sulfur oxides

Name: _____

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- _____ 54. tallgrass prairie
- _____ 55. deciduous forest
- _____ 56. littoral zone
- _____ 57. tropical rain forest
- _____ 58. tundra
- _____ 59. methyl bromide
- _____ 60. warm deserts

Answer questions in reference to the five biomes listed below:

- a. tundra
 - b. grassland
 - c. desert
 - d. taiga (boreal forest)
 - e. savanna
- _____ 61. A tropical plant community composed primarily of shrubby trees widely spaced and surrounded by grasses is this biome.
 - _____ 62. A community composed of herbaceous plants, no trees, a very short growing season, and relatively few animal species is likely to be this biome.
 - _____ 63. This biome is characterized by variable daily temperatures and plants that are highly resistant to desiccation.
 - _____ 64. This biome has the richest soils.
 - _____ 65. Conifers are most likely to be found in this biome.

Answer questions in reference to the five biomes listed below:

- a. tundra
 - b. chaparral
 - c. desert
 - d. taiga (coniferous forest)
 - e. deciduous forest
- _____ 66. In this biome, you could find a black spruce.
 - _____ 67. In this biome, you are most likely to find sagebrush.
 - _____ 68. In this biome, you would expect to find caribou.
 - _____ 69. This biome would be most likely to have a black oak.
 - _____ 70. This biome is most likely to have a population of moose.