

Student: _____

1. Soils are formed by a series of processes commonly referred to as
 - A. Lithification.
 - B. Diagenesis.
 - C. Sedimentation.
 - D. Weathering.
2. The composition of a soil is controlled by
 - A. The composition of bedrock on which it forms.
 - B. Climate.
 - C. The extent of chemical weathering.
 - D. All of the choices are correct.
3. Mechanical weathering can include all of the following except
 - A. Salts crystallizing in cracks in rocks.
 - B. Solution of limestone by acid rain.
 - C. Water freezing and thawing in rocks.
 - D. The action of plant roots working into crevices.
4. Which of the following minerals is/are least susceptible to chemical weathering in a moist, temperate climate?
 - A. Quartz
 - B. Calcite
 - C. Ferromagnesian
 - D. Feldspars
5. One of the key components of chemical weathering is the presence of
 - A. Water.
 - B. Neutrality.
 - C. Alkalinity.
 - D. Acidity.
6. Based on the chemical composition of the minerals given below, weathering of _____ produces sulfuric acid in solution.
 - A. Quartz
 - B. Calcite
 - C. Pyrite
 - D. Halite
7. Feldspars chemically weather through a reaction with water to become clay minerals. This chemical reaction is especially rapid
 - A. The more acidic the water.
 - B. The more alkaline the water.
 - C. The lower the water temperature.
 - D. For larger feldspar crystals.
8. Higher temperatures along with moister climates generally increase the rate of
 - A. Biological weathering only.
 - B. Biological and chemical weathering.
 - C. Biological and mechanical weathering.
 - D. Biological, chemical and mechanical weathering.

9. The process by which soluble minerals are dissolved and removed from soil is termed
 - A. Soil creep.
 - B. Organic.
 - C. Leaching.
 - D. Erosion.
10. Organic matter in soil is found principally in the
 - A. A horizon.
 - B. B horizon.
 - C. C horizon.
 - D. R layer.
11. Uncontaminated rain water has a pH of 5.6 (slightly acidic) because
 - A. Oxides of sulfur are always present in the atmosphere, even from natural sources.
 - B. Droplets of water necessarily condense on atmospheric particulate.
 - C. Most water vapor originates by evaporation from the oceans and sea water is acidic.
 - D. Upon condensation, water chemically reacts with carbon dioxide forming a weak carbonic acid.
12. The B soil horizon is also known as
 - A. The zone of leaching or zone of loss.
 - B. The zone of accumulation or zone of gain.
 - C. Bedrock.
 - D. Topsoil.
13. The tendency of the soils to form clumps of soil particles or lumps is referred to as the soil
 - A. Fertility.
 - B. Texture.
 - C. Structure.
 - D. Chemistry.
14. The moderately leached soil rich in aluminum and iron compounds that is characteristic of the eastern United States is a _____ type of soil.
 - A. Marble
 - B. Pedocal
 - C. Laterite
 - D. Pedalfer
15. The color of a soil reflects
 - A. Organic matter content (brown or black) and iron content (red).
 - B. Type of vegetation growing on the soil.
 - C. Development of peds.
 - D. Degree of soil horizon maturity.
16. Lateritic soils
 - A. Are rich in nutrients.
 - B. Are the common soils of tropical rain forests.
 - C. Are kept soft and workable by the action of sun and rain.
 - D. All of the choices are correct.
17. Soil composed of broadly similar proportions of sand, clay and silt is
 - A. Loam.
 - B. Laterite.
 - C. Pedocal.
 - D. Leached.

18. Which of the following types of soil would be likely to drain most readily (be most permeable)?
- A. Clay
 - B. Silt
 - C. Sand
 - D. Loam
19. Soil erosion
- A. Adds sediment load to streams, affecting stream hydrology and biology.
 - B. Adds sediments to coastal ocean water, blanketing light-dependent organisms such as corals and reducing their viability.
 - C. Adds agricultural chemicals to stream water and coastal water.
 - D. All are true.
20. Soil erosion is a significant contributor to this
- A. Storm water runoff pollution.
 - B. Ground water recharge.
 - C. Deforestation.
 - D. Global warming.
21. Which of the following factor is a contributor to soil erosion?
- A. Burrowing animals
 - B. Rain
 - C. Wind
 - D. All the choices are correct.
22. When soil is eroded from farmland,
- A. The nutrient-rich topsoil is least affected.
 - B. Crop yields and crop nutritional quality may be reduced.
 - C. New soil quickly forms replacing that which is lost.
 - D. All of the choices are correct.
23. Soil formation is dependant upon
- A. Climate.
 - B. Nature of the parent material and organic matter.
 - C. Topography.
 - D. Time.
 - E. All the choices are correct.
24. Which of the following is the most true?
- A. At this time, soil is eroding in the U.S. about 10 times faster than it is forming.
 - B. Soil erosion is always easily reversible, using conservation techniques.
 - C. Very little farmland in the United States has experienced moderate to severe erosion lately.
 - D. The most important agent of soil erosion is winter frost heave.
25. Best management practices
- A. Are measures implemented to minimize soil erosion.
 - B. Are farming methods that add fertilizer to soil.
 - C. Are livestock feeding techniques that increase the production of dairy and meat products.
 - D. Are programs for better management of forests.
26. Soil erosion from farmland can be reduced by all of the following methods except
- A. Contour plowing.
 - B. Terracing of fields.
 - C. Complete clearing of fields after harvest.
 - D. Use of windbreaks.

27. Terracing of farmland
A. Is a very new soil-conservation method.
B. Reduces surface-water runoff velocity and thus the efficiency of soil erosion and transport.
C. Substantially reduces wind erosion by flattening field surfaces.
D. Is only used on very steep slopes.
28. The process of planting alternating bands of different crops to disrupt wind flow and slow wind erosion is
A. Strip cropping.
B. Contour plowing.
C. Terracing.
D. Lateritization.
29. Abundant water promotes chemical weathering because most of the relevant reactions involve water.
True False
30. Chemical and mechanical weathering are two processes, unrelated to each other.
True False
31. The finer rock fragments are, the more subject they are to chemical weathering, because finer fragments have a higher surface-to-volume ratio.
True False
32. All soils, by definition, must show well-developed A, B and C horizons.
True False
33. Higher organic matter content in the soil imparts a blackish coloration to the soil.
True False
34. The presence of iron in a soil may give it a yellow or red color from iron oxides.
True False
35. The tendency to form clumps or peds is undesirable in a soil to be used for agriculture.
True False
36. The typical soil of a tropical rain forest also is excellent for farming because it supports such lush plant growth.
True False
37. In areas with adequate rainfall, such as the northern United States, soil formation is rapid and easily keeps pace with soil erosion.
True False
38. Soil and water conservation can be brought about by techniques such as terracing and contour plowing that would slow down the surface runoff.
True False
39. Consequences of sediment pollution include more rapid infilling of reservoirs and clogging of stream channels.
True False
40. Degradation of soil fertility has no effect on the farmland needed to feed the world by diminishing its availability.
True False
41. The basic strategy in controlling soil erosion is to slow down the eroding agents, wind and water.
True False
42. Off-road vehicles should only use existing roads to minimize their environmental impact.
True False

43. Irrigation in dry climates may dissolve and thus mobilize, toxic elements in the soil.
True False
44. The U.S. Department of Agriculture has become increasingly concerned about soil erosion, because expansion of agricultural activities between 1982 and 1992 resulted in sharp increases in rates of soil erosion loss from farmland.
True False
45. Worldwide, the amount of arable land per capita is increasing as a consequence of expanded irrigation and improved farming methods.
True False
46. Wetland soils may serve a water-purification role.
True False

12 Key

1. Soils are formed by a series of processes commonly referred to as
A. Lithification.
B. Diagenesis.
C. Sedimentation.
D. Weathering.

Montgomery - Chapter 12 #1

2. The composition of a soil is controlled by
A. The composition of bedrock on which it forms.
B. Climate.
C. The extent of chemical weathering.
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Montgomery - Chapter 12 #2

3. Mechanical weathering can include all of the following except
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Montgomery - Chapter 12 #3

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Montgomery - Chapter 12 #4

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Montgomery - Chapter 12 #5

6. Based on the chemical composition of the minerals given below, weathering of _____ produces sulfuric acid in solution.
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Montgomery - Chapter 12 #6

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Montgomery - Chapter 12 #7

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Montgomery - Chapter 12 #8

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Montgomery - Chapter 12 #9

10. Organic matter in soil is found principally in the
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Montgomery - Chapter 12 #10

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Montgomery - Chapter 12 #11

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B. The zone of accumulation or zone of gain.
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Montgomery - Chapter 12 #12

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Montgomery - Chapter 12 #13

14. The moderately leached soil rich in aluminum and iron compounds that is characteristic of the eastern United States is a _____ type of soil.
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Montgomery - Chapter 12 #14

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Montgomery - Chapter 12 #15

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Montgomery - Chapter 12 #16

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Montgomery - Chapter 12 #17

18. Which of the following types of soil would be likely to drain most readily (be most permeable)?
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Montgomery - Chapter 12 #18

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D. All are true.

Montgomery - Chapter 12 #19

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B. Ground water recharge.
C. Deforestation.
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Montgomery - Chapter 12 #20

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Montgomery - Chapter 12 #21

22. When soil is eroded from farmland,
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B. Crop yields and crop nutritional quality may be reduced.
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Montgomery - Chapter 12 #22

23. Soil formation is dependant upon
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Montgomery - Chapter 12 #23

24. Which of the following is the most true?
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D. The most important agent of soil erosion is winter frost heave.

Montgomery - Chapter 12 #24

25. Best management practices
A. Are measures implemented to minimize soil erosion.
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Montgomery - Chapter 12 #25

26. Soil erosion from farmland can be reduced by all of the following methods except
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Montgomery - Chapter 12 #26

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C. Substantially reduces wind erosion by flattening field surfaces.
D. Is only used on very steep slopes.

Montgomery - Chapter 12 #27

28. The process of planting alternating bands of different crops to disrupt wind flow and slow wind erosion is
A. Strip cropping.
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C. Terracing.
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Montgomery - Chapter 12 #28

29. Abundant water promotes chemical weathering because most of the relevant reactions involve water.
TRUE

Montgomery - Chapter 12 #29

30. Chemical and mechanical weathering are two processes, unrelated to each other.
FALSE

Montgomery - Chapter 12 #30

31. The finer rock fragments are, the more subject they are to chemical weathering, because finer fragments have a higher surface-to-volume ratio.
TRUE

Montgomery - Chapter 12 #31

32. All soils, by definition, must show well-developed A, B and C horizons.
FALSE

Montgomery - Chapter 12 #32

33. Higher organic matter content in the soil imparts a blackish coloration to the soil.
TRUE

Montgomery - Chapter 12 #33

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Montgomery - Chapter 12 #34

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FALSE
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FALSE
46. Wetland soils may serve a water-purification role.
TRUE

Montgomery - Chapter 12 #35

Montgomery - Chapter 12 #36

Montgomery - Chapter 12 #37

Montgomery - Chapter 12 #38

Montgomery - Chapter 12 #39

Montgomery - Chapter 12 #40

Montgomery - Chapter 12 #41

Montgomery - Chapter 12 #42

Montgomery - Chapter 12 #43

Montgomery - Chapter 12 #44

Montgomery - Chapter 12 #45

Montgomery - Chapter 12 #46

12 Summary

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