

Student: \_\_\_\_\_

1. In the United States, conversion of rural land to other uses
  - A. Affects a little more than 2 million acres each year.
  - B. Is done primarily to provide more highways and housing.
  - C. No longer occurs to any significant extent; land uses by now are generally fixed.
  - D. Has purposely been halted to conserve farmland.
2. The land-use concept of using the same piece of land for two or more purposes simultaneously is termed
  - A. Sequential use.
  - B. Multiple use.
  - C. Conservation.
  - D. Restrictive zoning.
3. One after the other, if the land is used for two or more different purposes then the type of useage is defined as
  - A. Sequential use.
  - B. Multiple use.
  - C. Conservation.
  - D. Restrictive zoning.
4. In the United States, the federal government exercises control over \_\_\_\_ the land area.
  - A. One half
  - B. One third
  - C. One fourth
  - D. One fifth
5. All of the following are examples of sequential land use except
  - A. Use of old quarries for recreational lakes.
  - B. Cultivation of land being used for a windmill array.
  - C. Use of an abandoned strip mine for a landfill.
  - D. Paving a finished landfill to make a parking lot.
6. Examples of multiple use include all of the following except
  - A. Having a golf course atop a finished landfill site.
  - B. Farming and grazing cattle on land used for a power-generating windmill array.
  - C. Building of a ball field within a retention pond for flood control.
  - D. Mining deep underground while a recreational park is in use above.
7. An important planning tool used in variety of applications for land-use and engineering geology involves
  - A. Weather data.
  - B. Geophysical data.
  - C. Maps.
  - D. None of the choices are correct.
8. GIS is an acronym for this
  - A. Global Information System.
  - B. Geographic Information System.
  - C. Geologic Information System.
  - D. Graphical Interface System.

9. Computers can be helpful in generating land-use planning maps because they can
  - A. Process large quantities of data quickly.
  - B. Produce composite land-use suitability maps that incorporate many kinds of geologic and other data.
  - C. Produce several suitability maps for different purposes from the same data by weighting the data differently in each case.
  - D. All of the choices are correct.
  
10. The utility of maps as planning tools is limited by which of the following considerations?
  - A. The problem that small features may not show on large-scale maps.
  - B. The fact that, for many areas of the United States, there are excessive amounts of data available, too much to be adequately represented on a map.
  - C. The impossibility of mapping non-geologic parameters, such as population density.
  - D. All of the choices are correct.
  
11. Which of the following statements about U.S. land-use policy is true?
  - A. Each area is assigned one land use deemed best for that area.
  - B. Under current law, all federal lands are protected from development.
  - C. The emphasis was on resource exploitation until the mid-twentieth century.
  - D. Federal policies are of little importance overall because the area covered by national parks is relatively small.
  
12. Some engineering geology considerations involve:
  - A. The quality and quantity of surface and ground water
  - B. The topography of the region
  - C. Susceptibility to mass wasting
  - D. The type of rocks present
  - E. All the choices are correct.
  
13. Engineers of the Trans-Alaska Pipeline had to take into account all of the following except
  - A. Earthquakes.
  - B. Tornados.
  - C. The need to cross hundreds of streams.
  - D. Permafrost.
  
14. In cold climates, there may exist a permanently frozen \_\_\_\_\_ zone in the soil.
  - A. Vadose
  - B. Permafrost
  - C. Sensitive clay
  - D. Accumulation
  
15. The Leaning Tower of Pisa leans because
  - A. The designers wanted it that way.
  - B. The structure itself was poorly built.
  - C. The tower was built on unstable clay-rich soils.
  - D. Modern construction nearby has disturbed the foundation.
  
16. Construction of the Panama Canal was hindered by
  - A. Rockslides into the canal, which necessitated extra excavation.
  - B. Quick clays beneath the canal.
  - C. Too low a regional water table to fill the canal adequately.
  - D. All of the choices are correct.

17. China's plan for the Three Gorges Dam is expected to
  - A. Increase damage from the frequent flooding of the Yangtze River.
  - B. Provide as much as 10 percent of China's energy needs through hydroelectric power generation, thus reducing greenhouse-gas emissions and particulate pollution from fossil fuel use.
  - C. Inundate a trivial amount of farmland, because it is sited in a narrow gorge walled with granite bedrock.
  - D. Have minimal effect on indigenous species in the river, because of the history of river contamination that has decimated the river ecology already.
18. The Rotterdam subway was built by
  - A. Raising the tunnel on stilts to keep it above the local water table.
  - B. Building the tunnel in segments which were flooded, sunk into position, then joined and pumped dry.
  - C. Draining water from below the city to allow excavation of a dry tunnel.
  - D. Baking the ground to harden the clays, then blasting the tunnel through.
19. The U.S. Army Corps of Engineers has identified a number of unsafe dams in this country. In the overwhelming majority of cases, the problem is that
  - A. The dam itself isn't strong enough to contain the water.
  - B. The rocks in which the dam is built are weak.
  - C. The dam spillway is inadequate.
  - D. The dam is not high enough for high-rainfall events.
20. The St. Francis Dam in California failed because
  - A. The reservoir was overfilled.
  - B. Some of the rocks of the valley walls disintegrated when wet.
  - C. There was movement on the fault over which the dam was built.
  - D. The dam itself was poorly built and collapsed.
21. Engineering geology has only developed in the last few decades, when it became necessary to understand geological materials for construction projects.  
True False
22. The need for land-use planning is diminishing now that geologic hazards are better understood.  
True False
23. An advantage of multiple or sequential land use is that less land overall must be disturbed by human activities.  
True False
24. Maps of geologic or other land characteristics provide a quick means of assessing suitability of broad areas for specific land uses.  
True False
25. Land-use decisions are clear-cut, yes-or-no decisions; planners decide whether individual parcels are or are not suitable for particular uses.  
True False
26. In the United States, damage from expansive clay soils is approximately as great as damage from all other geologic hazards combined.  
True False
27. Expansive clay is a product of chemical weathering of granite.  
True False
28. Expansive clays do not pose a threat in engineering geology activities.  
True False
29. Because Alaska is so cold, the Trans-Alaska Pipeline had to be heated along much of its length to keep the oil flowing and to avoid damage from freezing soil.  
True False

30. The Panama Canal was cut to sea level to facilitate boats' passage between Atlantic and Pacific oceans and this is why its construction took so long.  
True False
31. When dams are found to be unsafe, the problem is most often that they have been built with defective materials that are not strong enough to hold the projected reservoir volume.  
True False
32. Dams are often built across fault zones because streams frequently flow along valleys cut into the weakened rocks along fault zones.  
True False
33. Scale modeling allows simulation of natural disasters to test the response of structures to the associated stresses.  
True False
34. One of the limitations of using maps is the factor of scale.  
True False
35. In the United States, the federal government owns some percentage of land in almost every state and territory.  
True False
36. In addition to scale modeling and laboratory tests of materials, computer simulations may be used in the process of designing earthquake-resistant structures.  
True False
37. Rapid development of dams for hydropower raises concerns about dam safety.  
True False

## 20 Key

1. In the United States, conversion of rural land to other uses  
**A.** Affects a little more than 2 million acres each year.  
B. Is done primarily to provide more highways and housing.  
C. No longer occurs to any significant extent; land uses by now are generally fixed.  
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*Montgomery - Chapter 20 #1*

2. The land-use concept of using the same piece of land for two or more purposes simultaneously is termed  
A. Sequential use.  
**B.** Multiple use.  
C. Conservation.  
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*Montgomery - Chapter 20 #2*

3. One after the other, if the land is used for two or more different purposes then the type of useage is defined as  
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*Montgomery - Chapter 20 #3*

4. In the United States, the federal government exercises control over \_\_\_\_\_ the land area.  
A. One half  
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*Montgomery - Chapter 20 #4*

5. All of the following are examples of sequential land use except  
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*Montgomery - Chapter 20 #5*

6. Examples of multiple use include all of the following except  
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*Montgomery - Chapter 20 #6*

7. An important planning tool used in variety of applications for land-use and engineering geology involves  
A. Weather data.  
B. Geophysical data.  
**C.** Maps.  
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*Montgomery - Chapter 20 #7*

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*Montgomery - Chapter 20 #8*

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*Montgomery - Chapter 20 #9*

10. The utility of maps as planning tools is limited by which of the following considerations?
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*Montgomery - Chapter 20 #10*

11. Which of the following statements about U.S. land-use policy is true?
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*Montgomery - Chapter 20 #11*

12. Some engineering geology considerations involve:
- A. The quality and quantity of surface and ground water
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*Montgomery - Chapter 20 #12*

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*Montgomery - Chapter 20 #13*

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*Montgomery - Chapter 20 #14*

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  - C.** The tower was built on unstable clay-rich soils.
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*Montgomery - Chapter 20 #15*

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*Montgomery - Chapter 20 #16*

17. China's plan for the Three Gorges Dam is expected to  
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*Montgomery - Chapter 20 #17*

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*Montgomery - Chapter 20 #18*

19. The U.S. Army Corps of Engineers has identified a number of unsafe dams in this country. In the overwhelming majority of cases, the problem is that  
A. The dam itself isn't strong enough to contain the water.  
B. The rocks in which the dam is built are weak.  
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*Montgomery - Chapter 20 #19*

20. The St. Francis Dam in California failed because  
A. The reservoir was overfilled.  
**B.** Some of the rocks of the valley walls disintegrated when wet.  
C. There was movement on the fault over which the dam was built.  
D. The dam itself was poorly built and collapsed.

*Montgomery - Chapter 20 #20*

21. Engineering geology has only developed in the last few decades, when it became necessary to understand geological materials for construction projects.  
**FALSE**

*Montgomery - Chapter 20 #21*

22. The need for land-use planning is diminishing now that geologic hazards are better understood.  
**FALSE**

*Montgomery - Chapter 20 #22*

23. An advantage of multiple or sequential land use is that less land overall must be disturbed by human activities.  
**TRUE**

*Montgomery - Chapter 20 #23*

24. Maps of geologic or other land characteristics provide a quick means of assessing suitability of broad areas for specific land uses.  
**TRUE**

*Montgomery - Chapter 20 #24*

25. Land-use decisions are clear-cut, yes-or-no decisions; planners decide whether individual parcels are or are not suitable for particular uses.  
**FALSE**
26. In the United States, damage from expansive clay soils is approximately as great as damage from all other geologic hazards combined.  
**TRUE**  
*Montgomery - Chapter 20 #25*
27. Expansive clay is a product of chemical weathering of granite.  
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*Montgomery - Chapter 20 #26*
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31. When dams are found to be unsafe, the problem is most often that they have been built with defective materials that are not strong enough to hold the projected reservoir volume.  
**FALSE**  
*Montgomery - Chapter 20 #30*
32. Dams are often built across fault zones because streams frequently flow along valleys cut into the weakened rocks along fault zones.  
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*Montgomery - Chapter 20 #35*
37. Rapid development of dams for hydropower raises concerns about dam safety.  
**TRUE**  
*Montgomery - Chapter 20 #36*
- Montgomery - Chapter 20 #37*

## 20 Summary

<u>Category</u>	<u># of Questions</u>
Montgomery - Chapter 20	37