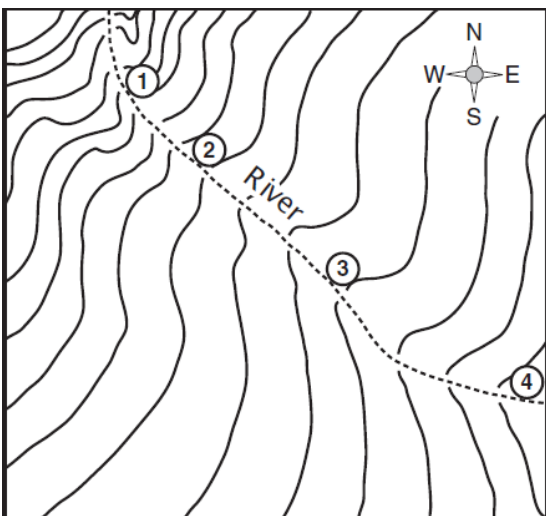


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Earth & Environmental Science Midterm Exam Study Guide

Date of Midterm Exam: Wednesday, January 10, 2018

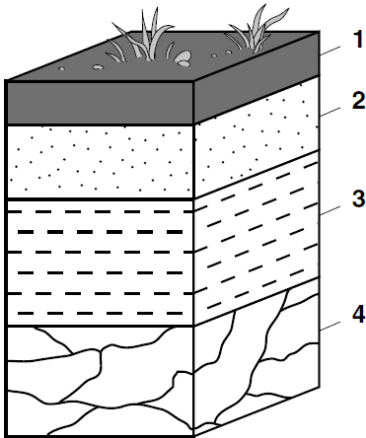
1. Which provides the best evidence for the theory that faults and volcanoes are results of tectonic plate interactions?
 - a. Faults on tectonic plates are in constant motion, but volcanoes may not erupt for many years.
 - b. Faults and volcanoes existed long before there were tectonic plates.
 - c. Tectonic plates that have many faults do not usually have volcanoes.
 - d. Faults and volcanoes are often found at tectonic plate boundaries.
2. The breakdown of rocks and minerals into smaller particles without a change in composition is called _____
 - a. igneous intrusion
 - b. chemical precipitation
 - c. mechanical weathering
 - d. metamorphic foliation
3. Metamorphic rocks with a layered or banded look are called —
 - a. foliated
 - b. unfoliated
 - c. striated
 - d. evaporated
4. Which recent geologic processes commonly occur in the Coastal Plain region of North Carolina?
 - a. Crustal uplift and rock deformation
 - b. Rifting and intrusion
 - c. Erosion and deposition
 - d. Subduction and metamorphism
5. Identical rock types, identical fossils, and very similar mountain ranges are found on different continents that are separated by a wide ocean. Which of these best explains these observations?
 - a. Organisms traveled between these continents on land bridges.
 - b. The same forces erode mountains in different locations.
 - c. These continents were joined together at one time in the past.
 - d. Some rock types are very common and are found everywhere.



6. The river shown on the topographic map flows fastest at point —
 - a. 1
 - b. 2
 - c. 3
 - d. 4

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Soil Profile



7. Which layer of the soil profile would be affected the most by weathering and erosion?
- 1
 - 2
 - 3
 - 4
8. The folding and faulting found in the rocks of the Appalachian Mountains of North Carolina were created by —
- collisions of continental plates
 - wave action of prehistoric ocean
 - the Coriolis effect
 - heating and cooling of the prehistoric atmosphere
9. The major disadvantage of using solar panels to generate electricity is that solar panels —
- release toxic fumes into the air
 - cannot convert energy efficiently
 - are affected by cloud coverage and day length
 - produce energy that cannot be stored
10. Limestone chips dissolve after they are placed in a beaker of dilute acid. Which geologic process is this most similar to?
- Faulting
 - Folding
 - Weathering
 - Subduction
11. Which of the following processes will change a sedimentary rock into an igneous rock?
- Melting and crystallization
 - Erosion and deposition
 - Deformation and deposition
 - Faulting and fracturing
12. Some fuels are classified as nonrenewable because they —
- produce toxic waste
 - can be easily recycled
 - come from deep within Earth
 - require a long period of time to form

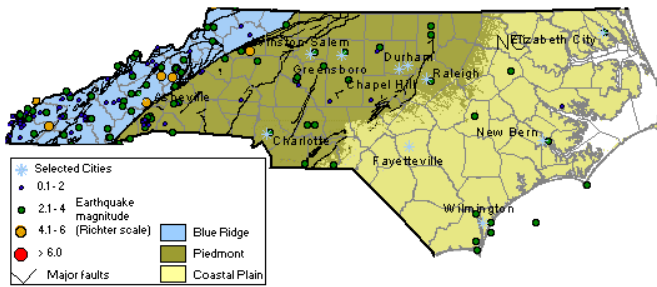
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13. Why are seismic waves of an earthquake more strongly felt at the epicenter of an earthquake?
 - a. Because millions of small movements of crust occur there
 - b. Because most faults converge at the epicenter
 - c. Because the epicenter is directly above the focus, the place inside the earth where the earthquake starts
 - d. Because crustal plates rise and fall with the ocean tides
14. Why are wind, water, and gravity major agents of erosion rather than weathering?
 - a. Because weathering is often limited to physical changes in earth material
 - b. Because weathering is often limited to chemical changes in earth material
 - c. Because erosion involves the stationary processes that break down rock
 - d. Because erosion involves movement of earth materials from one location to another
15. Which more likely to prevent mass-movement events?
 - a. Constructing buildings in stream drainage paths
 - b. Clear-cutting trees from the side of a mountain
 - c. Paving roads next to sloping hills
 - d. Contour plowing of crop areas
16. How does the replacement of large land areas with concrete and asphalt affect the land?
 - a. It changes the bedrock of underlying layers of soil
 - b. It prevents the dynamics of the rock cycle
 - c. It increases the amount of groundwater in porous rock
 - d. It increases the erosion of sediments by increasing runoff
17. Why does mining of coal and other natural resources often result in environment pollution?
 - a. Mining pollutes the air near streams
 - b. Mining produces acid precipitation near streams
 - c. Mining creates waste material which can flow into streams
 - d. Mining strips the surface of the land near streams
18. Which alternative energy technology could take advantages of land and sea breezes in coastal NC?
 - a. Biofuels production
 - b. Wind farms
 - c. Solar energy panels
 - d. Nuclear fusion
19. Why would citizens be advised to recycle plastic products?
 - a. Because the products are not biodegradable and would therefore accumulate
 - b. Because this would increase the consumption of petroleum products
 - c. Because this would decrease the amount of green industry jobs
 - d. Because the products can be made into inexpensive public art
20. When rocks along strike-slip fault lines catch and build up pressure, they eventually break and release a great deal of energy. The point from which this energy is released is known as the _____.
 - a. Epicenter
 - b. Focus
 - c. Energy fissure
 - d. Fracture

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21. When looking at an igneous rock it is noticed that the crystals of the rock are coarse (big). This property tells us that the rock cooled _____.

- a. Intrusive
- b. Extrusive



22. The map above shows the earthquake activity in North Carolina over the past two decades. Based on the information which section of North Carolina is most likely to experience an earthquake?

- a. Piedmont
- b. Mountains
- c. Outer coastal plain
- d. Inner coastal plain

23. Which of the following isn't a factor/force involved with erosion?

- a. Gravity
- b. Wind
- c. Tension
- d. Water

24. Why is solar energy essential to plants?

- a. Solar energy maintains the internal temperature of the plants
- b. Solar energy is converted to chemical energy used by the plants
- c. Solar energy signals the plants to release leaves in the fall
- d. Solar energy regulates the consumption of oxygen by the plant

25. The role of an organism in the ecosystem is its:

- A. community
- B. niche
- C. habitat
- D. ecotone

26. In a forest food chain, the least amount of energy would flow to which organism?

- A. mushrooms
- B. caterpillars
- C. rabbits
- D. foxes

27. The biome with the most biodiversity is

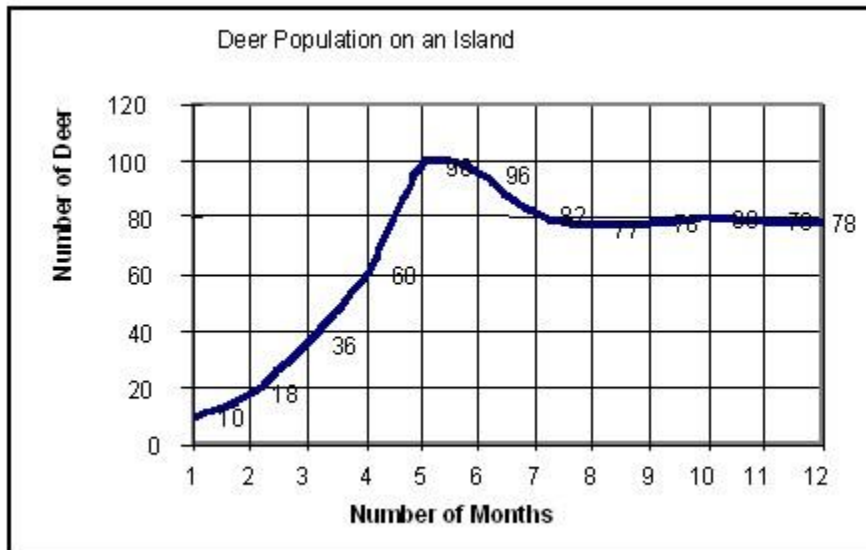
- A. a desert
- B. a tropical savannah
- C. a tropical rain forest
- D. a taiga

28. What accounts most completely for the biodiversity in tropical rain forests?

- A. dense vegetation allows for little wind
- B. rainfall differences in distinct layers
- C. high levels of competition
- D. differences in sunlight creating specialized niches

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For questions 29-30, use the graph to answer the questions below.



29. What is the carrying capacity of the deer on the island?
- A. 100 deer
 - B. 80 deer
 - C. 5 months
 - D. there is none
30. Between which months is the birth rate higher than the death rate?
- A. months 5-7
 - B. months 7-12
 - C. months 1-5
 - D. months 1-12
31. Re-processing materials to make another product is called _____.
- A. reducing
 - B. reusing
 - C. recycling
 - D. decomposition
32. Charlotte, North Carolina is located within the _____ biome.
- A. Temperate Deciduous Forest
 - B. Temperate Coniferous Forest
 - C. Grasslands
 - D. Temperate Rain Forest
33. A modern landfill is required to:
- A. Be sited on a location well above the water table.
 - B. Have a leachate collection system.
 - C. Have a waterproof clay or plastic liner at the bottom.
 - D. Be surrounded by groundwater monitoring wells.
 - E. All of the above.

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34. Which trophic level(s) contain(s) heterotrophs?

- A. Producer
- B. Primary Consumer
- C. Secondary Consumer
- D. Tertiary Consumer

35. Which trophic level(s) contain(s) herbivores?

- A. Producer
- B. Primary Consumer
- C. Secondary Consumer
- D. Tertiary Consumer

36. Which trophic level(s) contain(s) carnivores?

- A. Producer
- B. Primary Consumer
- C. Secondary Consumer
- D. Tertiary Consumer

37. Which trophic level(s) perform(s) photosynthesis?

- A. Producer
- B. Primary Consumer
- C. Secondary Consumer
- D. Tertiary Consumer

38. The study of interactions among organisms and between organisms and their abiotic environment that live and interact within the same area at the same time:

- A. ecosystem
- B. ecology
- C. biotic factors
- D. biosphere

39. Organisms (such as horses or deer) that consume plants only are known as:

- A. herbivores
- B. carnivores
- C. omnivores
- D. detritivores

40. Organisms (such as bears) that consume both plants and other animals are known as:

- A. herbivores
- B. carnivores
- C. omnivores
- D. detritivores/decomposers

41. Which trophic level(s) contain(s) autotrophs?

- A. Producer
- B. Primary Consumer
- C. Secondary Consumer
- D. Tertiary Consumer

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42. Which of the following is a non-renewable resource?

- A. aluminum
- B. wind
- C. coal
- D. bamboo

43. Deliberately introduced nonnative species tend to become pests because

- A. they do not adapt well to the new environment
- B. they increase the biodiversity
- C. they often lack natural predators
- D. they lack carrying capacities

44. When introduced into an ecosystem, invasive species

- A. consume competing native species
- B. displace competing native species
- C. disrupt the water cycle
- D. reduce land fertility

45. Flatworms feeding on nutrients in the human digestive system would be an example of:

- A. predation
- B. competition
- C. commensalism
- D. parasitism