

Idaho FFA
Environment & Natural Resources
Career Development Event
Written Exam
2008

- This test includes 50 questions
- Read each question carefully
- Select the answer that best answers the question
- Circle the correct answer
- Write the Letter (A, B, C, D, or E) on the test answer sheet. Only one answer will be allowed for each question. Multiple answers on any line will disqualify the answer.

Do not look at any other examination answer sheets. The exam monitors will immediately remove students suspected of cheating.

If you finish the exam early, you may quietly leave the room.

- Give your answer sheet to the test monitor at the head of the room
 - You may take the questions with you

2008 Environmental Science and Natural Resources CDE Exam
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1. What is ecology?
 - A. a complex network of living and nonliving organisms
 - B. the branch of science dealing with the complex relationships of nonliving organisms
 - C. the branch of science dealing with the complex relationships among living things and their environment
 - D. the branch of science dealing only with natural resources
2. The natural process of plants releasing water into the atmosphere is called:
 - A. evaporation
 - B. transportation
 - C. condensation
 - D. respiration
3. A perpetual natural resource is one that:
 - A. comes from an essentially inexhaustible supply
 - B. is found in a fixed amount in nature
 - C. has the ability to renew itself by natural processes
 - D. is also called a stock resource
4. The highest rate or level at which a renewable natural resource can be used without damaging its ability to renew itself is called the:
 - A. recruitment rate
 - B. multiple use rate
 - C. level of economic viability
 - D. level of sustained yield
5. The scientific method is:
 - A. a way of figuring out how the natural world works
 - B. can only be used by scientists
 - C. helps us understand questions regarding personal values
 - D. always involves the use of complex equipment and detailed experiments
 - E. all of the above
6. A very well tested theory to which no exceptions have ever been found is called a:
 - A. theory
 - B. fact
 - C. natural law
 - D. hypothesis
7. Which sphere contains all the plants and animals on the earth's surface?
 - A. biosphere
 - B. hydrosphere
 - C. atmosphere
 - D. lithosphere

8. There are 5 natural elements that make up about 95% of the mass of living organisms on earth. These elements are called macronutrients and they include:
- A. Carbon, Oxygen, Hydrogen, Nitrogen, and Phosphorus
 - B. Potassium, Oxygen, Hydrogen, Nitrogen, and Phosphorus
 - C. Carbon, Oxygen, Hydrogen, Sodium, and Phosphorus
 - D. Carbon, Iron, Hydrogen, Nitrogen, and Phosphorus
9. Which of the following is a process by which carbon in fossil fuels on the earth are converted to carbon dioxide in the atmosphere?
- A. fixation
 - B. combustion
 - C. denitrofication
 - D. all of the above
10. Suppose you did a study on the effect of water pH on purple toads and you found that toads can live in water with a pH between 4.2 and 7.3 (and they cannot survive if the pH is lower than 4.2 or higher than 7.3). What would you call this range (from 4.2 to 7.3)?
- A. the optimal range
 - B. the range of tolerance
 - C. the homeostatic range
 - D. the actual range
11. Nitrates are used in making _____, which are the building blocks of protein:
- A. glucuronic acids
 - B. neurons
 - C. glycosides
 - D. amino acids
12. The place where an organism lives (including biotic and abiotic factors) is called its:
- A. niche
 - B. habitat
 - C. community
 - D. population
13. A large terrestrial ecosystem that can be easily recognized by its own unique vegetation, animals, and climate is called a:
- A. biome
 - B. vegetation region
 - C. temporal zone
 - D. continent
14. A coastal aquatic ecosystem where fresh water from rivers, streams, and runoff mixes with salty sea water is called:
- A. a watershed
 - B. a euphotic zone
 - C. a recharge zone
 - D. an estuary

15. The large grassland areas of Africa are unique because they contain large deciduous trees (mostly Acacia trees) that are adapted to fire. This type of tropical grassland with scattered deciduous trees is called a:
- A. tundra
 - B. savanna
 - C. deciduous forest
 - D. tropical rain forest
 - E. desert
16. Of the following terrestrial ecosystem, which has the greatest biomass and species diversity?
- A. tundra
 - B. savanna
 - C. deciduous forest
 - D. tropical rain forest
 - E. desert
17. Ecosystems are:
- A. patterns of genetic flow and distribution in a specific region
 - B. complex relationships among non-living organism
 - C. natural resources
 - D. complex networks of living organisms and non-living attributes that interact in a specific area
18. In the components of a forest food chain, which is the primary consumer:
- A. small herbs on the forest floor
 - B. foxes
 - C. rabbits and squirrels
 - D. fungi
19. Because some energy is lost as heat at each step in a food chain -- there must be:
- A. more producers than consumers
 - B. more consumers than producers
 - C. more decomposers than producers
 - D. more decomposers than consumers
20. In coniferous forests there are species of fungi, called mycorrhiza, that grow underground and sometimes connect to tree roots. The fungi feed on plant sap from the roots. They also dissolve inorganic minerals and make them available to the trees through these root connections. These relationships would be best described as:
- A. mutualism
 - B. allelopathic
 - C. parasitism
 - D. competition

21. The abyssal zone of the ocean is the area:
- A. that is deeper than sunlight can penetrate so it is always dark
 - B. where some light penetrates so it is like twilight during the day
 - C. where the ocean is warmed by ocean vents to the mantle of the earth
 - D. where salty sea water is diluted by fresh-water streams and rivers
22. Secondary succession is different from primary succession because it:
- A. begins with bare rock
 - B. occurs on sites that were previously vegetated and therefore have soil
 - C. can occur without precipitation
 - D. involves competition between plants
 - E. all of the above
23. Very stable ecosystems are usually characterized by:
- A. many pioneer species and low biodiversity
 - B. short food chains and low biomass
 - C. complex food chains and great biodiversity
 - D. mostly producers with few decomposers or tertiary consumers
24. A temperature inversion occurs when a:
- A. layer of cold air traps a layer of warm air near the surface
 - B. layer of pollution traps a layer of warm air near the surface
 - C. layer of warm air traps a layer of cold air near the surface
 - D. fast increase in temperature creates a swift wind at the surface
25. Normal or natural rain has a pH of about:
- A. 1.5
 - B. 3.4
 - C. 5.6
 - D. 7.0
26. The gradual breakdown of rock into soil particles by natural forces is called:
- A. leaching
 - B. aggrading
 - C. weathering
 - D. degradation
 - E. fracturing
27. Predictable and gradual change from one community with the passage of time is called:
- A. ecological succession
 - B. ecosystem drift
 - C. retrogression
 - D. threshold type conversion

28. Leaching in soil occurs when:
- A. humus is dissolved
 - B. water removes soluble nutrients
 - C. organic compounds slowly decay
 - D. rock is shattered by frost action
29. This type of erosion can be responsible for up to 95% of soil loss due to erosion:
- A. wind erosion
 - B. splash erosion
 - C. sheet erosion
 - D. gully erosion
30. Living organisms in soil generally have the following effect:
- A. reduce soil aeration and infiltration
 - B. diminish overall fertility
 - C. act as decomposers and add humus to soil
 - D. all of the above
31. Why is salinization of soils a "bad" thing for croplands:
- A. it decreases the amount of water available to plants
 - B. it decreases crop yields per acre
 - C. it can lead to desertification
 - D. all of the above
32. What is the purpose of using impermeable clays in constructing landfills?
- A. impermeable clays do not settle as much as other clays
 - B. to prevent leaching of household chemicals into groundwater
 - C. impermeable clays are more conducive to plant growth
 - D. it prevents the formation of ozone and radon
33. A sustainable farming method used by the Native Americans of the Ohio Valley was to grow corn with peas that grew up the corn stalks and squash which covered the ground to reduce weeds. This system of farming would be an example of:
- A. polyculture
 - B. monoculture
 - C. poly-varietal cultivation
 - D. agroforestry
34. Which of these agricultural practices has made it possible to meet the current world food demands?
- A. conversion of wetlands to croplands
 - B. use of fertilizer and improved genetics
 - C. food production demands have actually decreased in the last 20 years
 - D. deforestation to make room for croplands

35. The area of land on which all runoff, sediment, and water soluble substances flow to a single surface water outlet (like a river or stream) is called:
- A. recharge zone
 - B. aquifer
 - C. buffer strip
 - D. watershed
36. Before the ingredients of soil are broken down and form soil they are know as:
- A. organic minerals
 - B. lithogenic materials
 - C. felsic mix
 - D. parent material
37. Ozone in the stratosphere:
- A. absorbs ultraviolet radiation
 - B. protect plants from severe ultraviolet damage
 - C. protects humans from sunburns and skin cancer
 - D. all of the above
38. The hydrologic cycle receives its energy from:
- A. shifts in ocean tides
 - B. solar radiation (i.e., the sun)
 - C. geothermal radiation (i.e., the earth's core)
 - D. lunar movement patterns (i.e., the moon)
39. The concentration of carbon dioxide in the atmosphere is being:
- A. decreased by respiration
 - B. decreased by pollution
 - C. increased by the burning of fossil fuels
 - D. increased by photosynthesis
40. Healthy riparian areas are ecologically beneficial because they:
- A. improve water quality and reduce floods
 - B. add essential nutrients and soil sediments to waterways
 - C. provide safe places for livestock to cross streams
 - D. increase the temperature of water in estuaries by decreasing shading of water
41. Rangeland carrying capacity is the:
- A. direction of change in range condition
 - B. number of animals that land can support without causing land degradation
 - C. number of animals a manager decides to put on the land
 - D. physical space available for grazing animals
42. How much of the U.S. is covered by forests?
- A. one tenth (10%)
 - B. one third (30%)
 - C. one half (50%)
 - D. two thirds (65%)

43. In a forest, what is a snag?
- A. a dead tree that is still standing and providing important wildlife habitat
 - B. a young coniferous tree that is important as forage for wildlife
 - C. an area of mature trees that is great wildlife habitat
 - D. a meadow of mostly grasses that provides important forage in forests
44. The major ways in which forests affect the global climate is:
- A. through the effects of photosynthesis and transpiration
 - B. by serving as windbreaks
 - C. by effecting the phosphorus cycle
 - D. by converting ozone into carbon dioxide
45. What is an animal that was once domesticated but now live in a wild or naturalized setting and behaves as wild animals?
- A. an exotic species
 - B. a redomesticated species
 - C. a feral species
 - D. a wildlife species
46. Pheasants, quail, and grouse are all examples of:
- A. waterfowl
 - B. big game
 - C. upland gamebirds
 - D. neotropical migrants
47. There are 437 national wildlife refuges in the U.S. Over 300 of these refuges (75%) were established especially for:
- A. neotropical migrants
 - B. endangered species
 - C. migratory waterfowl
 - D. big game like deer and elk
48. An endangered species is any species that could:
- A. undergo alteration of its genetic traits
 - B. become rare within the next century
 - C. in danger of soon becoming extinct in all or part of its range
 - D. eventually could become threatened or rare
49. Invasive, non-native species impose enormous costs on :
- A. agriculture
 - B. forestry
 - C. human health
 - D. all of the above
50. All non-indigenous species are harmful
- A. true
 - B. false