

2013
Environmental Science and Natural Resources CDE Exam
Idaho FFA

There are 50 questions to this test
There is only 1 correct answer per question

Carefully fill in the correct answer on the Scantron
Return this copy of the questions with your answers

Do Not Write on This Question Sheet

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1. 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 values.
 - d. always involves the use of complex equipment and detailed experiments.
 - e. all of the above.

2. A scientist speculates that the declining populations of sage-grouse in Idaho are caused by above normal numbers of crows and ravens. This speculation is best referred to as:
 - a. a hypothesis**
 - b. an observation
 - c. a theory
 - d. a natural law

3. An example of a renewable natural resource is:
 - a. Coal
 - b. Diamonds
 - c. Mushrooms**
 - d. Glass

4. Under the Wilderness Act of 1964 land can be designated as “Wilderness” if it is an area of land that:
 - a. is dominated by large trees and used as wildlife habitat.
 - b. is pristine rangeland that is not used for livestock grazing.
 - c. the U.S. Forest Service manages only for recreation and no other uses.
 - d. has not been strongly affected by humans and where humans are only visitors.**

5. The idea that land managers should conduct activities so that the productive capacity of the land is maintained and available for future generations is called:
 - a. Sustainability**
 - b. Multiple use
 - c. Assessment
 - d. Monitoring

6. 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. Potassium, Oxygen, Hydrogen, Nitrogen, and Phosphorus
 - b. Carbon, Oxygen, Hydrogen, Nitrogen, and Phosphorus**
 - c. Carbon, Oxygen, Hydrogen, Sodium, and Phosphorus
 - d. Carbon, Iron, Hydrogen, Nitrogen, and Phosphorus

7. The largest reservoir for nitrogen on earth is in:
 - a. the bodies of plants and animals
 - b. the soil and rocks
 - c. the atmosphere**
 - d. the oceans

8. 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. geotrication
 - b. combustion**
 - c. denitrofication
 - d. all of the above

9. Fixation is a word for several processes by which:
- Phosphate in the soil is converted to phosphorus gas in the air
 - Carbon dioxide in the air is converted to glucose
 - Solar energy is captured by rocks and water to heat the earth
 - Nitrogen gas in the air is converted to nitrate or ammonia**
10. Photosynthesis is the process by which solar energy is converted to chemical energy. This chemical energy is:
- in the form of chlorophyll.
 - found in the bonds of glucose.**
 - given off as carbon dioxide.
 - used by the plant to capture oxygen from the atmosphere.
11. The highest rate at which a renewable natural resource can be used without damaging its ability to renew itself is called:
- the recruitment rate
 - the replacement rate
 - the level of economic viability
 - the level of sustained yield**
12. A biotic or abiotic component of an organism's environment that can reduce the organisms ability to reproduce or grow if it is inadequate is called a:
- range of tolerance
 - referent
 - limiting factor**
 - regulating channel
13. Most of the gross energy in an ecosystem is found in the:
- Decomposers
 - Producers**
 - Secondary Consumers
 - Tertiary Consumer
14. A species is best defined as:
- any individual plant, animal, or microbe.
 - a group of plants, animals, and microbes in a particular place.
 - a kind of plant, animal, or microbe that can interbreed and produce fertile young.**
 - a group of plants, animals, and microbes and their abiotic surroundings.
15. Which of the following could be called an ecosystem:
- The number of wild horses in Nevada
 - The number of pygme rabbits in the Great Basin region
 - All of the plants, animals, and microbes in the Bolivian Altiplano
 - All of the living organisms on Moscow Mountain plus all the abiotic factors that affect these biotic entities**
16. In the following forest food chain which is the secondary consumer:
- small herbs on the forest floor
 - foxes**
 - rabbits and squirrels
 - fungi
17. Bears, pigs and ostriches all eat both plants and other animals and are called:
- primary producers
 - omnivores**
 - carnivores
 - decomposers

18. An example of a homeothermic organism is:
- a. A plant
 - b. A snake
 - c. An insect
 - d. **A mammal**
19. In coniferous forests there are species of fungi that grow underground and sometimes connect to tree roots. The fungi steal plant sap from the roots. But, they also dissolve inorganic minerals and make them available to the trees through these root connections. These connections between tree roots and fungi are called "mycorrhizal" relationships which would be best described as:
- a. **Mutualism**
 - b. Symbiosis
 - c. Parasitism
 - d. Competition
20. If a wildlife species and a livestock species use the same resource (such as food or water) and if that resource is in limited supply this may cause harm to both animals because neither will have enough of the required resources, it is called:
- a. Mutualism
 - b. Commensalisms
 - c. **Competition**
 - d. Antagonism
21. A systematic and repeated collection of data and photos to document forest or rangeland community changes over time:
- a. Bio-analysis
 - b. Assessment
 - c. **Monitoring**
 - d. Inventory
22. What attribute is a rangeland manager assessing if she clips vegetation in a plot to determine the weight of forage per unit and calculates forage production in pounds/acre?
- a. **Biomass**
 - b. Composition
 - c. Cover
 - d. Fequency
23. 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 biome
 - d. **an estuary**
24. The location and extent of the terrestrial ecosystems on the globe are primarily determined by:
- a. the phosphorus cycle
 - b. **temperature and precipitation**
 - c. human activity
 - d. albedo and fixation
25. 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. Temperate Desert
26. The deep rich soils found on grasslands and prairies characterized by significant organic matter in the A-horizon are of which soil order?
- a. Aridisols
 - b. Entisols
 - c. Andisols
 - d. **Mollisol**

27. The gradual breakdown of rock into soil particles by natural forces is called:
- a. leaching
 - b. agrading
 - c. **weathering**
 - d. degradation
 - e. fracturing
28. The humus in soils refers to:
- a. one of the inorganic, mineral constituents of the soil.
 - b. all of the soil microorganisms.
 - c. finely divided bits of leaves, twigs, and other litter.
 - d. **a residue of organic matter from the rotting and decomposition of detritus.**
 - e. the fine particles of rock.
29. Leaching in soil occurs when:
- a. organic nutrients are converted to inorganic forms.
 - b. **soluble nutrients are moved out of the root zone by water.**
 - c. organic compounds slowly decay.
 - d. rock is shattered by the action of freezing and thawing.
 - e. water is taken up by plant roots.
30. The arrangement of soil aggregates or peds in the soil profile is called:
- a. Soil texture
 - b. Soil series
 - c. **Soil structure**
 - d. Soil physics
31. A soil conservation practice where fields are cultivated and planted perpendicular to the slope following its elevation contour lines:
- a. **contour farming**
 - b. strip cropping
 - c. wind breaking
 - d. no-till farming
32. Desertification is the process by which land becomes more desert-like and is associated with a loss of biomass production. Desertification is a result of:
- a. change in soil pH
 - b. loss of mineral soil particles by erosion
 - c. loss of soluble nutrients by leaching
 - d. **loss of soil organic matter**
33. An integrated approach of using the interactive benefits from combining trees and shrubs with crops and/or livestock is called:
- a. Polyculture
 - b. Poly-varietal cultivation
 - c. Multi-species agriculture
 - d. **Agroforestry**
34. Vegetation communities that are adjacent to streams or ponds and are different than surrounding vegetation because of high available moisture are called:
- a. Watersheds
 - b. **Riparian areas**
 - c. Uplands
 - d. Xeric sites

35. How much rangeland is there on the earth's land surface compared to forests?
- About the same amount
 - Nearly twice as much rangeland as forest**
 - About half as much rangeland as forest
 - Just 10% more rangeland than forest
36. What do all rangelands have in common?
- Currently grazed by some type of livestock.
 - Require periodic cultivation to be productive.
 - Include grazing and fire as important ecological processes.**
 - Are dominated by exotic annual grasses.
37. Of the three major types of forests which has the coldest climate:
- Tropical rainforest
 - Deciduous forest
 - Coniferous forest**
38. In a forest, what is a snag?
- a dead tree that is still standing and providing important wildlife habitat**
 - a young coniferous tree that is important as forage for wildlife
 - an area of mature trees that is great wildlife habitat
 - a meadow of mostly grasses that provides important forage in forests.
39. The major ways in which forests affect the global climate is:
- through the effects of photosynthesis and transpiration**
 - by serving as windbreaks
 - by effecting the phosphorus cycle
 - by converting ozone into carbon dioxide
40. Fires set by humans under specified conditions to accomplish landscape management goals are:
- Wildland Fire Use (WFU)
 - Prescribed Fires**
 - Managed Wildfires
 - Fire Regime
41. Grasses generally dominate areas with frequent wildfire because:
- Grasses contain chemicals that make them less flammable than shrubs.
 - Grasses are annual plants that survive fire by depositing seed at ground level.
 - Grasses have deeper roots than shrubs or trees to access soil moisture and recover after fire.
 - Grasses have meristems at the base of the plant that are usually not damaged by fire.**
42. An introduced or exotic plant is one that:
- Was brought to North America from another continent.**
 - Is invasive and tends to displace other plants in the community.
 - A plant that is growing where it is not wanted.
 - All of the above

43. Plants that are called grass-like plants would include:
- Succulent plants like cactus
 - Small rhizomatous shrubs
 - Most wildflowers
 - All sedges and rushes**
44. Biological control of invasive plants involves:
- Determining the phenological stage at which herbicides are most effective.
 - Suppressing weeds with living organisms including parasites or pathogens.**
 - Changing the nutrients available in the ecosystem to suppress weeds.
 - Guiding succession processes to facilitate site modification and reduce weed competitiveness.
45. What is the name for a native animal that is not, or never has been, domesticated?
- an exotic species
 - a redomesticated species
 - a feral species
 - a wildlife species**
46. Pheasants, quail and dove are all examples of:
- waterfowl
 - big game
 - upland gamebirds**
 - neotropical migrants
47. An endangered species is any species that could:
- undergo alteration of its genetic traits
 - become rare within the next century
 - soon become extinct in all or part of its range**
 - a species that indicates that an ecosystem is not healthy
48. A pollutant, besides carbon dioxide, that contribute to the greenhouse effect include:
- methane**
 - ozone
 - hydrogen gas
 - helium gas
 - nitrogen gas
49. The following are potential sources of point source pollution:
- Extractive and amenity forms of recreation
 - Construction and urban development
 - Crop production and grazing
 - Industry output and sewage treatment plants**
50. The Federal Act that requires that the environmental impacts of actions on federal land must be evaluated and that the public be involved in management decisions is the:
- National Environmental Policy Act**
 - Expanded Homestead Act.
 - Taylor Grazing Act
 - Endangered Species Act