

**2021  
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.

1. Evidence that does not use scientific methods and relies primarily on personal testimony is:
  - a) Theoretical
  - b) **Anecdotal**
  - c) Inductive
  - d) Retrospective
  
2. The organisms UNABLE to manufacture their own food are called \_\_\_\_\_.
  - a) producers
  - b) decomposers
  - c) providers
  - d) **consumers**
  
3. On average, mineral soil particles account for about \_\_\_\_\_% of the soil volume:
  - a) 5-10%
  - b) 20-25%
  - c) **45-50%**
  - d) 70-75%
  
4. Mineral soil particles are classified based on:
  - a) age
  - b) color
  - c) composition
  - d) **size**
  
5. Before the mineral ingredients of soil are broken down and form soil they are known as:
  - a) **parent material**
  - b) organic mineral
  - c) lithogenic material
  - d) felsic mix
  
6. Which of the following is a consequence of soil compaction?
  - a) **Decreased infiltration of rain**
  - b) Increased soil salinity
  - c) Decreased soil fertility
  - d) Increased weathering of rocks
  
7. Solar energy a wind power are examples of \_\_\_\_\_ energy:
  - a) fossil
  - b) **perpetual**
  - c) non-renewable
  - d) fuel cell
  
8. Because trees absorb and store \_\_\_\_\_, planting trees may help to slow global warming:
  - a) Oxygen
  - b) Carbon Monoxide
  - c) **Carbon Dioxide**
  - d) Methane
  
9. Mammals and birds use energy from consuming and digesting food to regulate their body temperature and therefore have an internal temperature which is independent of their surroundings. Animals with this characteristic are called:
  - a) Poikilotherms
  - b) Heterotrophs
  - c) Autotrophs
  - d) **Homeotherms**
  
10. The study of biological, chemical, and physical features of lakes, ponds, and other bodies of fresh water is called:
  - a) **Limnology**
  - b) Aquaculture
  - c) Pedology
  - d) Agrostology
  
11. The greatest threat to wildlife across the globe is:
  - a) **habitat loss and destruction due to human activities**
  - b) toxic pollution in water
  - c) increasing ultraviolet radiation due to ozone depletion
  - d) acid rain

12. The approach of managing a piece of land for several uses at the same time, such as recreation, grazing and logging, is called:
- Sustained Yield
  - Multiple-Use**
  - Regenerative Agriculture
  - Outcomes Based Management
13. 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:
- Potassium, Oxygen, Hydrogen, Nitrogen, and Phosphorus
  - Carbon, Oxygen, Hydrogen, Sodium, and Phosphorus
  - Carbon, Oxygen, Hydrogen, Nitrogen, and Phosphorus**
  - Carbon, Iron, Hydrogen, Nitrogen, and Phosphorus
14. The most abundant herbivores in forests and grasslands are:
- Mammals
  - Humans
  - Vertebrates
  - Insects**
15. The place where an organism lives (including biotic and abiotic factors) is called its:
- Niche
  - Habitat**
  - Community
  - Population
16. Plant communities of low growing shrubs and grasses that dominate high latitudes and high altitudes are:
- Tundra**
  - Savannas
  - Scrublands
  - Boglands
17. Which is NOT one of the four forest types:
- Temperate
  - Tropical
  - Subtropical
  - Circumpolar**
18. In food chains and food webs, consumers including carnivores and omnivores
- get energy from digestion of plants and animals**
  - are the beginning of any food chain
  - weigh more than producers in an ecosystem
  - require microbes in their gut to get energy from detritus
19. On rangelands, both cattle and elk eat primarily grasses. If the grass becomes limited causing cattle and elk to lose weight, the relationship between cattle and elk would be best described as:
- mutualistic
  - allelopathic
  - parasitic
  - competitive**
20. Conifer tree species belong to which vascular plant group?
- angiosperm
  - algae
  - gymnosperm**
  - bryophyte

21. Very stable ecosystems are usually characterized by:
- complex food chains and great biodiversity**
  - many pioneer species and low biodiversity
  - short food chains and low biomass
  - mostly producers with few decomposers or tertiary consumers
22. The number of deer the Cottonwood Wildlife Management Area (WMA) can support year after year without degrading plant communities or the deer would be the \_\_\_\_\_.
- Population Level
  - Carrying Capacity**
  - Harvest Level
  - Bag Limit
23. About one-tenth (10%) of the earth's land surface is capable of being tilled and used to grow crops and is known as \_\_\_\_\_ land
- Sustainable
  - Mollisol
  - Arable**
  - Endemic
24. How much rangeland is there on the earth's land surface compared to forests?
- About twice as much rangeland than forest**
  - About the same amount
  - About half as much rangeland as forest
  - About 10% less rangeland than forest
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:
- Tundra
  - Savanna**
  - Tropical rain forest
  - Desert
26. Which of these game birds is exotic?
- Sage-grouse
  - California Quail
  - Sharptail Grouse
  - Pheasants**
27. All the populations of plants and animal species that live and interact in a given area at a particular time, as well as the chemical and physical factors that make up the non-living environment are called a[n] \_\_\_\_\_.
- Ecosystem**
  - Socio-Economic System
  - Symbiotic World Order
  - Environmental Microcosm
28. A modern approach to crop production that tracks crop yield of specific areas in a field, using GPS and GIS technologies, and then strategically applies water, fertilizer, herbicides, or pesticides to some areas of a field more than others is called:
- Precision Farming**
  - Regenerative Agriculture
  - Industrial Farming
  - Sedentary Tillage

29. Leaching in soil occurs when...
- soluble nutrients are moved out of the root zone by water.**
  - organic nutrients are converted to inorganic forms.
  - organic compounds slowly decay.
  - water is taken up by plant roots.
30. Resources (such as food and clean water) and processes (such as purifying water or reducing floods) that are supplied to humans by a natural ecosystem are called:
- Biosphere balancing
  - Biological control
  - Ecological services**
  - Amenity values
31. Biogas generation is mainly based on the process of fermenting organic material producing \_\_\_\_\_ which is used as fuel.
- propane
  - biodiesel
  - terpenes
  - methane**
32. Foresters must consider ecological, economic, social, and regulatory factors when developing a forest management plan. Which of the factors below should be considered first when developing a plan?
- Climate**
  - Wildlife
  - Recreation
  - Distance to a mill
33. Fire is an important factor in maintaining grasslands because it:
- burns live plants but leaves behind litter
  - kills or weakens competing trees and shrubs**
  - damages roots of grass species
  - scarifies grass seeds and makes them more viable
34. Which is the tallest conifer species in the world?
- Coast Douglas-fir
  - Coast Redwood**
  - Giant Sequoia
  - Sitka Spruce
35. Cattle, sheep, deer and elk can eat and digest high fiber foods, such as grass stems, because they...
- secrete digestive enzymes that break down cellulose in grass.
  - ferment cellulose and breakdown particles in the cecum and colon.
  - have microorganisms in the rumen that break down cellulose.**
  - digest sugars and starches and pass fiber through the digestive system and into manure.
36. A stream with high bank erosion and lose of sediment washing down the stream is called:
- Aggrading
  - Degrading**
  - Weathering
  - Re-channeling
37. The stream characteristic that describes how much the stream meanders back and forth across the valley floor is called:
- Gradient
  - Entrenchment
  - Width-depth ratio
  - Sinuosity**

38. 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.
39. Prescribe burns are fires that:
- are caused by lightening
  - never get out of control
  - are set on purpose by land managers**
  - are set accidentally by recreationists
40. The Fire Triangle concept states that fire needs three things to sustain it. Remove any of these three things and the fire will stop. What are the three elements of the Fire Triangle?
- Heat, Oxygen, and Fuel**
  - Oxygen, Time, and Humidity
  - Wind, Slope, and Fuel
  - Lightening, Sparks, and Flame
41. Prescribed fire is often used in Idaho as a land management tool to....
- control invasive woody plants like juniper.**
  - reduce risk of invasion by annual grasses like cheatgrass.
  - improve abundance of sage-grouse and sagebrush plants.
  - increase carbon sequestration and reduce global warming.
42. The use of land resources (including soils, water, animals, and plants) to produce goods to meet human needs, while simultaneously ensuring the long-term productive potential and function of these resources is known as:
- Regenerative agriculture
  - Sustainable land management**
  - Polyculture
  - Utilitarian approaches
43. Which of the following characteristics would be an abiotic feature of wildlife habitat:
- Plants that provide food or contain toxins.
  - Light intensity such as shade versus full sun.**
  - Risk of predation by carnivores.
  - Other animals in an individual's the herd or flock.
44. In wildlife management, nongame species are...
- wildlife harvested for sport or food.
  - animals designated for removal because they are destructive (i.e., varmints).
  - wildlife that are managed for their ecological value and not hunted.**
  - animals that were once domesticated but have taken on a wild lifestyle.

45. Under the 1964 Wilderness Act, land can be designated as “Wilderness” if it is an area of land that...
- has not been strongly affected by humans and where humans are only visitors.**
  - is dominated by large trees and used as wildlife habitat.
  - is pristine prairie that is not used for livestock grazing.
  - is managed only for hiking and horseback riding and no other uses.
46. The National Forest Management Act
- sets policies to regulate timber harvesting on national forests.**
  - encourages prescribed burning as a means of protecting national forests.
  - promotes the removal of small trees and underbrush by timber companies.
  - provides incentives for private forest managers to reduce timber harvest.
47. Ruminant livestock such as cattle and sheep can contribute to climate change by...
- releasing methane during rumination.**
  - releasing nitrous oxide when manure breaks down.
  - converting carbon dioxide into oxygen during respiration.
  - compacting the soil which releases fluorinated gases.
48. The use of a specific kind of livestock at a determined season, duration, and intensity to accomplish a vegetation or landscape goal, such as controlling weeds or fuel load is called \_\_\_\_\_ grazing.
- rotational
  - multi-species
  - short-duration
  - targeted**
49. The goals of ecological restoration projects are generally designed to...
- improve that ecological health and condition of damaged lands.**
  - introduce new species that will be more beneficial to humans.
  - replace natural vegetation with superior genetically modified species.
  - restore a landscape to how it looked before humans inhabited it.
50. Recreation on forests and rangelands can be described as extractive or amenity. Which of the following would be an amenity form of recreation?
- Hiking and picnicking**
  - Hunting and fishing
  - Collecting elk antler sheds
  - Gathering wild mushrooms