

2017
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.

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1. The average American uses _____ gallons of water per day
 - A. 90
 - B. 60
 - C. 110
 - D. 140

2. When a federal agency funds, approves, or conducts an action that will have a significant effect on the environment, the agency must follow procedures outlined in the:
 - A. Clean Water Act
 - B. National Environmental Policy Act
 - C. Environmental Protection Act
 - D. Federal Land Policy and Management Act

3. When applying the scientific method to determine the effect of herbicides on leafy spurge researchers may apply herbicides to leafy spurge infested areas and they measure plant growth. But, they also measure leafy spurge in areas that were not treated for comparison. These untreated plants or areas are called:
 - A. Variables
 - B. Hypotheticals
 - C. Collateral groups
 - D. Control group

4. Photosynthesis is the process by which solar energy is converted to chemical energy. This chemical energy is:
 - A. in the form of chlorophyll
 - B. used by the plant to capture carbon dioxide
 - C. given off as oxygen
 - D. found in the bonds of glucose ($C_6H_{12}O_6$)

5. Which of the following could be called an ecosystem?
 - A. The living organisms on Kamiak Butte plus all the abiotic factors that affect this area
 - B. The number of wild horses in Nevada
 - C. The number of Western Tanagers in northern Utah
 - D. All of the plants, animals, and microbes in the New Zealand tussock grasslands

6. The major threats to Greater Sage-Grouse populations in Idaho are:
 - A. wildland fires in sagebrush ecosystems
 - B. unintended poisoning by agricultural chemicals
 - C. historic and current hunting pressure
 - D. conversion of sagebrush range to alfalfa fields

7. Swamps, marshes, bogs, sloughs, and potholes would all be examples of:
 - A. lotic systems
 - B. riparian zones
 - C. wetlands
 - D. estuaries

8. The natural process of plants releasing water into the atmosphere is called:
- A. transpiration
 - B. evaporation
 - C. respiration
 - D. condensation
9. "Old-growth" forests are:
- A. virgin forests that have never been cut for wood or lumber
 - B. forests that contain more than 90% mature trees
 - C. savannahs with tall wide-spaced trees and diverse understory vegetation
 - D. the state of a forest that has the poorest logging value
10. The ability of a warm-blooded animal to maintain a relatively stable body temperature despite the ambient temperature outside the animal. In other words, the animal's body temperature is relatively constant on cold and hot days. This temperature stability is an example:
- A. physio-neutrality
 - B. osmolality
 - C. cybernetics
 - D. homeostasis
11. 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
12. Some landowners install bat houses to encourage bats around their yard because bats:
- A. pollinate garden plants
 - B. eat mosquitos and flies
 - C. eat deadly spiders
 - D. keep woodpeckers away
13. Pygmy rabbits are small rabbits in sagebrush ecosystems that require forage with 5 to 23% protein to survive. However, these rabbits have their greatest growth and reproductive success on diets that range from 13 to 18% protein. This range of 13 to 18% is called the?
- A. density dependent series
 - B. optimal range
 - C. range of tolerance
 - D. viable range
14. A coastal aquatic ecosystem where fresh water from rivers, streams, and runoff mixes with salty sea water is called:
- A. a euphotic zone
 - B. a watershed
 - C. a recharge zone
 - D. an estuary
15. Because some energy is lost as heat at each step in a food chain, there must be:
- A. more consumers than producers
 - B. more decomposers than producers
 - C. more producers than consumers
 - D. more decomposers than consumers

16. The ability of an ecosystem to respond to a disturbance by resisting damage and recovering quickly is called:
- A. resilience
 - B. succession
 - C. mitigation
 - D. progression
17. A temperature inversion occurs when a:
- A. fast increase in temperature creates a swift wind at 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. layer of cold air traps a layer of warm air near the surface
18. The Southern Oscillation cycle is a term that describes fluctuations in ocean temperatures and winds in the Pacific Ocean near the equator. During this climatic cycle, a year of unusually warm and nutrient-poor water occurring in late December is called:
- A. El Niño
 - B. La Niña
 - C. Tropical Oscillation
 - D. Equatorial Vacillation
19. Living organisms in soil generally have the following effect:
- A. increase mottling in the soil
 - B. act as decomposers and add humus to soil
 - C. increase saline accumulation
 - D. all of the above
20. 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)
21. Which of the following are leading groundwater contaminants?
- A. Sewage and wastes
 - B. Vehicle landfills
 - C. Nitrates and pesticides
 - D. Feedlot wastes
22. 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 eat and lounge
 - D. increase the temperature of water in estuaries by decreasing shading of water
23. There are 437 national wildlife refuges in the U.S. Over 300 of these refuges (75%) were established especially for:
- A. neotropical migrants
 - B. migratory waterfowl
 - C. endangered species
 - D. upland game birds

24. An impact on ecosystems caused by humans is called:
- A. Endogenous
 - B. Holocene
 - C. Endemic
 - D. Anthropogenic
25. Overgrazing is defined as:
- A. removal of more than 40% of the plant biomass in an ecosystem
 - B. excessive trampling by livestock to damage basal meristems of plants
 - C. Grazing by livestock or wildlife that leads to ecosystem degradation
 - D. Grazing levels that lead to increase invasion by weeds
26. A body of rock or sediment that stores groundwater and allows the flow of groundwater.
- A. seep
 - B. infiltration zone
 - C. watershed
 - D. aquifer
27. The largest amount of usable water found on earth is used for:
- A. crop irrigation
 - B. household and personal use
 - C. industrial uses
 - D. livestock production
28. Control of pests by disrupting their ecological status, as through the use of organisms that are natural predators, parasites, or pathogens is known as:
- A. Genetically Modified Organisms (GMO's)
 - B. Biological Control (or Biocontrol)
 - C. Organo-Culture
 - D. Best Management Practices (BMP's)
29. A biosphere reserve conserves and preserves_____.
- A. heirloom varieties of crops and livestock
 - B. non-indigenous and exotic plants
 - C. wild animals and native vegetation
 - D. agricultural lands and agricultural heritage
30. What is the name of the area an individual animal consistently defends against incursions of animals of the same species (or occasionally against other species)?
- A. Habitat
 - B. Territory
 - C. Home Range
 - D. Potential Range
31. Wilderness is defined as land that is:
- A. not strongly affected by humans where humans are "visitors"
 - B. dominated by forest and used as wildlife habitat
 - C. rangeland that are not useful for livestock grazing
 - D. U.S. Forest Service land used only for recreation
32. Lakes that have few dissolved minerals in water (like phosphorus and potassium) and low biomass productivity are referred to as:
- A. autotrophic
 - B. oligotrophic
 - C. mesotrophic
 - D. eutrophic

33. Respiration in plants is a process that:
- A. produces energy from oxygen and nutrients in soil
 - B. transports inorganic compounds in soil to leaves
 - C. converts chemical bonds of organic compounds into energy for growth
 - D. gathers energy in sunlight to form sugar compounds
34. Some plants reduce competition by releasing chemicals that inhibit growth of neighboring plants. This plant characteristic is called:
- A. allelopathic
 - B. mutagenic
 - C. mutualistic
 - D. parasitic
35. Ecosystems dominated by grasses and shrubs are called rangeland and they make up about ____% of the earth's land surface:
- A. 15
 - B. 30
 - C. 50
 - D. 65
36. Nitrates are used in making _____, which are the building blocks of protein:
- A. glucuronic acids
 - B. amino acids
 - C. glycogen
 - D. triglycerides
37. Thickened leaves and thick fleshy stems are adaptations to:
- A. cold conditions
 - B. low altitudes
 - C. dry conditions
 - D. mesic conditions
38. Which of the following factors does not affect the rate of photosynthesis?
- A. Available moisture
 - B. Ultraviolet radiation
 - C. Amount of carbon dioxide
 - D. Quality of light
39. On a clear sunny day, how many degrees is the temperature expected to drop for every 1,000 feet gained in elevation?
- A. 10° F
 - B. 13.6° F
 - C. 7.4° F
 - D. 5.4° F
40. In undisturbed forest soils:
- A. infiltration rates are greater than rainfall
 - B. infiltration rates are negligible
 - C. rill and gully erosion is common
 - D. soil characteristics include high pH and high fertility
41. Which of the following is not a heterotroph?
- A. Mushrooms
 - B. Voles
 - C. Ferns
 - D. Bats

42. A mating system in wild or domestic animals in which males and females mate with many members of the opposite sex is called
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|-------------|----------------|
| A. monogamy | C. promiscuity |
| B. polygamy | D. obstinacy |
43. An ecosystem with a high percentage of biomass above ground is a characteristic of:
- | |
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| A. warm climates |
| B. polar regions |
| C. alpine ecosystems |
| D. northern latitudes |
44. Biodiversity is best described as the _____ in an ecosystem.
- | |
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| A. variety of species and life forms |
| B. multitude of connections between abiotic and biotic components |
| C. number of endangered or threatened species |
| D. location on the sere of succession |
45. Fire may affect an ecosystem in all of the following ways except:
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|--|
| A. removing excess debris that can decrease germination of some plants |
| B. promoting the growth of deciduous trees like oak |
| C. releasing the inorganic nutrients bound in organic matter like wood |
| D. controlling insect pests by removing the excess detritus in which they live |
46. An example of a perennial crop would be:
- | | |
|-------------|-------------|
| A. corn | C. potatoes |
| B. soybeans | D. alfalfa |
47. In the components of the following desert food chain, which is the primary consumer:
- | | |
|-----------------------------|--------------------------|
| A. herbivorous insects | C. insect eating lizards |
| B. small herbs under shrubs | D. vultures |
48. Pollution caused by discharging heated water into rivers and streams is created by:
- | | |
|---------------------|--------------------------|
| A. organic wastes | C. radioactive materials |
| B. inorganic wastes | D. thermal pollution |
49. Which layer of atmosphere absorbs almost all of the ultra-violet radiation that reaches the earth?
- | | |
|-----------------|---------------|
| A. Troposphere | C. Mesosphere |
| B. Stratosphere | D. Exosphere |
50. Ecosystems provide many services and resources that are used by society. Goods such as water, food, fiber, fuel and medicines are called _____ services.
- | | |
|-----------------|---------------|
| A. provisioning | C. supporting |
| B. regulating | D. cultural |