

**2015
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. These five natural elements that make up about 95% of the weight of living organisms on earth:
 - 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

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

3. Fixation is a word for several processes by which:
 - a. phosphate in the soil is converted to phosphorus gas in the air
 - b. carbon dioxide in the air is converted to glucose
 - c. solar energy is captured by rocks and water to heat the earth
 - d. **nitrogen gas in the air is converted to nitrate or ammonia**

4. Ecosystems are:
 - a. complex relationships among non-living elements
 - b. patterns of genetic flow and distribution in a specific region
 - c. natural resources
 - d. **biotic and abiotic factors that interact in a specific area**

5. Organic matter makes up what percent of an average soil?
 - a. **5%**
 - b. 25%
 - c. 45%
 - d. 10%

6. The type of erosion where soil is moved downslope by concentrated water running through little streamlets or channels is called _____ erosion:
 - a. sheet
 - b. **rill**
 - c. splash
 - d. mass

7. Which of the following is a consequence of soil compaction:
 - a. increased weathering of rocks
 - b. increased soil salinity
 - c. decreased soil fertility
 - d. **decreased absorption of water**

8. Desertification is the process by which land becomes more desert-like and is associated with a reduction in plant cover and biomass. Desertification is a result of:
 - a. **loss of soil organic matter**
 - b. change in soil pH
 - c. loss of mineral soil particles by erosion
 - d. loss of soluble nutrients by leaching

9. The _____ is the zone with the most biological activity in the soil.
- a. R horizon
 - b. B horizon
 - c. C horizon
 - d. **A horizon**
10. The deep rich soils found on grasslands and prairies characterized by significant organic matter are of which soil order:
- a. Aridisol
 - b. Andisol
 - c. Entisol
 - d. **Mollisol**
11. How much of the sun's solar energy is reflected back into space by clouds, chemicals, and dust in the atmosphere and by the earth's surface:
- a. 12%
 - b. **34%**
 - c. 59%
 - d. 75%
12. A temperature inversion occurs when a:
- a. **layer of warm air traps a layer of cold air near the surface**
 - b. layer of cold air traps a layer of warm air near the surface
 - c. layer of pollution traps a layer warm air near the surface
 - d. fast increase in temperature creates a swift wind at the surface
13. The process by which water on the ground surface enters the soil is called:
- a. condensation
 - b. precipitation
 - c. **infiltration**
 - d. evapotranspiration
14. The area that replenishes water in an aquifer through downward percolation of precipitation is called the:
- a. rain shadow
 - b. watershed
 - c. **recharge zone**
 - d. floodplain
15. The definition of a riparian area is:
- a. the grassy area at the border of fields
 - b. land that is at the top of a watershed border
 - c. **lands and vegetation adjacent to streams, rivers, and ponds**
 - d. strips of trees planted to reduce wind erosion
16. The location and extent of the terrestrial ecosystems of the world are primarily determined by:
- a. albedo and fixation
 - b. human activities
 - c. **temperature and precipitation**
 - d. recruitment and retention
17. The process by which seedlings or infants reach breeding age in a population of organisms is called:
- a. **recruitment**
 - b. survivorship
 - c. fertilization
 - d. parturition

18. Animals that obtain nutrients by consuming dead plants and animals are called:
- a. monotrophs
 - b. carnivores
 - c. cannibals
 - d. **detritivores**
19. Respiration in plants is a process that:
- a. transports inorganic compounds from soil to leaves
 - b. produces energy from water and nutrients in soil
 - c. gathers energy in sunlight to form sugar compounds
 - d. **converts chemical bonds of organic compounds into energy for growth**
20. What factor does not affect the rate of photosynthesis:
- a. **ultraviolet radiation**
 - b. available moisture
 - c. amount of light
 - d. quality of light
21. The ability of a living system to restore itself to an original condition after being exposed to a disturbance is called:
- a. retrogression
 - b. tolerance
 - c. **resilience**
 - d. niche
22. The gradual process of change in species composition or structure of an ecological community over time is called:
- a. ecotype conversion
 - b. **ecological succession**
 - c. retrogression
 - d. ecosystem drift
23. An animal species that was once domesticated, but now lives in a wild or naturalized setting and behaves as a wild species is called:
- a. **feral**
 - b. redomesticated
 - c. exotic
 - d. wildlife
24. Cattle and sheep can use high fiber foods effectively because they:
- a. pass structural carbohydrates through their digestive system
 - b. have an enlarged cecum for fermentation and particle breakdown
 - c. **have microorganisms in the rumen that break down cellulose**
 - d. secrete enzymes in the small intestine that digest cellulose
25. One of the most productive and diverse aquatic ecosystems are partially enclosed coastal bodies of water where seawater mixes with freshwater from streams and rivers. These ecosystems are called:
- a. euphotic zones
 - b. **estuaries**
 - c. coral reefs
 - d. benthic zones
26. Large freshwater lakes often develop different thermal zones during the summer months. The zone where water is the warmest and oxygen concentration is highest is called the:
- a. thermocline
 - b. hypolimnion
 - c. **epilimnion**
 - d. benthic zone

27. The relatively constant temperature observed in large bodies of water occurs because water has a:
- high surface tension
 - high specific heat**
 - low melting point
 - high viscosity
28. An example of a homeothermic organism is:
- a mammal**
 - an insect
 - a snake
 - a plant
29. Secondary succession is different from primary succession because it:
- begins with bare rock
 - involves competition between plants
 - can occur without precipitation
 - occurs on sites that were previously vegetated and therefore have soil**
 - all of the above
30. The layer of partially and fully decomposed organic materials lying below the litter and immediately above the mineral soil on the forest floor is referred to as:
- leaf fall
 - littoral mass
 - duff**
 - hypolimnion
31. The highest rate at which a renewable natural resource can be used without damaging its ability to renew itself is called:
- the level of sustained yield**
 - the level of economic viability
 - the recruitment rate
 - the replacement rate
32. A noxious weed is one that:
- requires control as designated by state or federal law**
 - an invasive plant that is toxic to animals
 - a plant that escapes from agricultural fields into adjacent rangeland or forests
 - an exotic plant that creates an allergic reaction in humans
33. Some invasive plants reduce competition by releasing chemicals that inhibit growth of neighboring plants. Plants with this characteristic are called:
- mutualistic
 - parasitic
 - mutagenic
 - allelopathic**
34. An ecosystem that depends on frequent fires to maintain itself is the:
- maple and oak forests
 - prairies and grasslands**
 - barren deserts
 - tundra shrublands

35. An adaptation of animals where they lower their metabolic rate to survive winter or cold conditions is called:
- a. poikilothermy
 - b. hyperactivity
 - c. senescence
 - d. **hibernation**
36. Grass plants are well-adapted to recover after fire or grazing because they:
- a. **keep their growing points near the base or crown of the plant**
 - b. have a symbiotic relationship with bacteria, called rhizobia, in their roots that fix nitrogen
 - c. contain a variety of toxic compounds to keep herbivores away
 - d. have secondary compounds to fuel a quick recovery
37. The primary source of food energy in a food chain comes from:
- a. decomposers
 - b. consumers
 - c. **producers**
 - d. water
38. 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
39. A plant that contains natural chemicals that can cause digestive, neurological or physiological damage to animals when eaten are called:
- a. herbaceous
 - b. exotic
 - c. noxious
 - d. **toxic**
40. The area of land on which all runoff flows to a single stream, river, lake, or other water body is called a:
- a. buffer strip
 - b. **watershed**
 - c. recharge zone
 - d. aquifer
41. The upper and lower limits to the range of particular environmental factors (e.g. light, temperature, available moisture) within which an organism can survive is called the:
- a. optimum range
 - b. zone of capability
 - c. range of abundance
 - d. **range of tolerance**
42. 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 then called:
- a. mutualism
 - b. **competition**
 - c. commensalism
 - d. antagonism

43. The largest amount of usable fresh water found on earth is used for:
- a. industrial uses
 - b. household uses
 - c. **crop irrigation**
 - d. recreation
44. The number of grazing animals that a piece of land can support on a long-term basis without causing damage to the ecosystem is called:
- a. Stocking Rate
 - b. Overgrazing
 - c. **Carrying Capacity**
 - d. Proper Use Factor
45. Which of the following is an example of a non-renewable resource?
- a. wind
 - b. water
 - c. bioenergy
 - d. **coal**
46. Ecosystems dominated by large trees are called forests and they make up about ____% of the earth's land surface:
- a. 15%
 - b. **30%**
 - c. 45%
 - d. 60%
47. Most commercial timber losses are caused by:
- a. illegal logging or firewood cutting
 - b. wildfire or uncontrolled prescribed burning
 - c. **insects and diseases**
 - d. natural disasters such as flooding or mudslides
48. Arable land is land that:
- a. has excessive infiltration rates
 - b. **can be used for growing crops**
 - c. is recovering from desertification
 - d. is highly resistant to erosion
49. Human activities that cause changes in an ecosystem are called:
- a. **anthropogenic**
 - b. retrogressive
 - c. biogenic
 - d. ecosystem services
50. Under the Endangered Species Act (ESA), actions that "*harm harass, pursue, hunt, shoot, wound, kill, trap, capture, or collect any threatened or endangered species*" are called:
- a. mitigating factors
 - b. consultations
 - c. **takings**
 - d. vantages