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Invitational 2022  
Environmental & Natural Resources CDE

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<b>KEY</b>		<b>Correct answer</b>
1	The branch of science dealing with the complex relationships among living things and their environment A. Biology B. Etiology C. Ecology D. Ethology	<b>C</b>
2	An example of a renewable resource is A. Natural gas B. Coal C. Pete D. Vegetation	<b>D</b>
3	Water, fuel, lumber, clothing, and food (plants and animals) are all _____ we rely upon every day. A. Essential resources for all life on earth B. Natural Resources C. Unlimited resources D. Man-made supplies	<b>B</b>
4	The available energy in a food web _____ moving up trophic levels. A. Decreases B. Increases exponentially C. Does not change D. Remains at equilibrium	<b>A</b>
5	The most important factor influencing how many and what types of organisms live in an ecosystem is the availability of... A. Shelter B. Water C. Energy D. Predators	<b>C</b>

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- 6 Which nutrient cycle involves Biological, Geological, Chemical and Anthropogenic cycles?
- A. Carbon **A**
  - B. Nitrogen
  - C. Phosphorous
  - D. Lithium
- 7 Organisms unable to manufacture their own food are called...
- A. Predators
  - B. Decomposers
  - C. Consumers **C**
  - D. Producers
- 8 The biotic community with its abiotic environment defines a...
- A. Population
  - B. Biome
  - C. Community
  - D. Ecosystem **D**
- 9 Ecological succession is
- A. The conversion of native grass communities to productive cropland.
  - B. The unpredictable transformation of a biological community into a new community.
  - C. The predictable transformation of a site into different biotic communities over time. **C**
  - D. The gradual transformation of wetland to desert.
- 10 A factor that DOES NOT affect the rate of soil formation is...
- A. Time
  - B. Frequency of plowing **B**
  - C. Parent material
  - D. Topography
- 11 This species can be used to monitor ecological health and provide evidence of past or realized changes in the environment.
- A. Extinct
  - B. Invasive
  - C. Indicator **C**
  - D. Endangered

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- 12 Soil is most accurately defined as...
- B. A substance used in agriculture to support crop production
  - C. An aggregate injected into gas wells.
  - D. The bottom most layer of the earth's crust.
- 13 The responsible management or care of land, property or resources is...
- A. Horticulture
  - B. Silviculture
  - C. Sustainability
  - D. Stewardship **D**
- 14 Soil particle size in order from smallest to largest...
- A. silt, clay, gravel, sand
  - B. clay, silt, sand, gravel **B**
  - C. silt, sand, clay, gravel
  - D. clay, sand, silt gravel
- 15 What ecosystem dominates the central region of the United States?
- A. Mountain
  - B. Temperate Forest
  - C. Desert
  - D. Grassland **D**
- 16 Clearing away natural vegetation can result in...
- A. Slowed erosion
  - B. Geologic erosion
  - C. Accelerated erosion **C**
  - D. No erosion at all
- 17 What are the three points of the fire triangle?
- A. heat, fuel, oxygen **A**
  - B. water, wind, heat
  - C. oxygen, light, heat
  - D. ignition temperature, fuel, heat
- 18 Alkalization, waterlogging, salinization, depletion of soil organic matter & deterioration of soil structure are all evidence of...

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- A. Soil erosion  
B. Soil degradation **B**  
C. Soil replacement  
D. Soil fixation
- 19 Which of the following is a non-agricultural use of land?  
A. Service areas and farmsteads  
B. Building railroad rights of ways **B**  
C. Woodlands and forestry  
D. Planting crops
- 20 Which of the following is a true statement about soils and land use?  
A. With the right fertilizer, any soil can be used to grow soy beans  
B. Any soil can be used for any purpose if it is modified  
C. Generally, any soil can be used for sewage disposal without polluting ground water.  
D. Specific types of soil vary in their suitability for construction, agricultural production and sewage disposal. **D**
- 21 Chemicals fall into two use-categories, General -use and Restricted-use. Why are some chemicals categorized as restricted-use?  
A. Because many people want to use them for pest control  
B. Because companies need to recover manufacturing costs  
C. Because of their high toxicity and dramatic impact on the environment if applied improperly. **C**  
D. Because they pose the least health hazards
- 22 The \_\_\_\_\_ contains all types of surface waters that evaporate to begin the water cycle.  
A. Biosphere  
B. Hydrosphere **B**  
C. Lithosphere  
D. Atmosphere
- 23 The \_\_\_\_\_ absorbs and holds moisture evaporated from the earth's surface.  
A. Hydrosphere  
B. Lithosphere

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- C. Biosphere  
D. Atmosphere **D**
- 24 When an excess amount of phosphorous invades a freshwater source, algal growth is stimulated giving the water body a cloudy, murky appearance which can cause changes in biological activities. This phenomenon is called...
- A. oligotrophism  
B. phosphorous fixation  
C. eutrophication **C**  
D. phosphorous cycle
- 25 \_\_\_\_\_ is not classified as hazardous waste.
- A. water soluble  
B. corrosive **A**  
C. flammable  
D. reactive
- 26 Acid rain is...
- A. a hazardous byproduct produced by mining  
B. air pollutants which adhere to precipitation and falls to the earth **B**  
C. water sources contaminated by human sewage  
D. a hazardous household chemical
- 27 In what year was The Environmental Protection Agency (EPA) created?
- A. 1970 **A**  
B. 1965  
C. 1975  
D. 1960
- 28 Which of the following has a negative impact on grassland ecosystems?
- A. rotational grazing  
B. fire suppression **B**  
C. mitigating soil erosion  
D. prescribed fire
- 29 Water that percolates from surface sources to groundwater sources is called...
- A. runoff

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- B. floodwaters  
C. wetlands  
D. water recharge **D**
- 30 The general pattern of weather conditions and rainfall over a period of years in a given region.  
A. Weather  
B. Average annual rainfall  
C. Climate  
D. Global warming **C**
- 31 Which of the following is NOT a major cause for the loss of wetlands in the U.S?  
A. Urbanization **B**  
B. Forest fires  
C. Agriculture  
D. Mining operations
- 32 A family of plants that use bacteria in nodes on their roots to convert atmospheric nitrogen to ammonia is called  
A. legumes **A**  
B. algae  
C. gymnosperms  
D. fungi
- 33 human activity that does not degrade the planets carrying capacity for other humans forever.  
A. Stewardship  
B. succession  
C. Sustainability **C**  
D. environmentalism
- 34 An exchange of oxygen by all forms of life, both animals and plants, using oxygen and releasing food energy, carbon dioxide and water.  
A. Photosynthesis  
B. Rumination  
C. Nitrification

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- D. Respiration **D**
- 35 What is a common method of desalination that would render oceanic water drinkable?  
A. evaporation  
B. condensation  
C. distillation **C**  
D. transpiration
- 36 It is important to correctly manage our mineral resources primarily because...  
A. They are nonrenewable resources **A**  
B. They are flammable  
C. They are renewable resources  
D. They are corrosive
- 37 The relationship between two organisms is referred to as mutualism when  
A. One organism feeds on another organism  
B. Two organisms live together or interact for the benefit of both **B**  
C. Two organisms live together and one benefits while the other is neither benefited or harmed  
D. Two organisms interact and one benefits while the other is harmed
- 38 Which of these is a benefit of prescribed fire?  
A. Increases disease occurrence  
B. Improve quality of grasses **B**  
C. removes nutrients from the soil  
D. All of the above
- 39 Land that drains into a pond, lake or stream is called the...  
A. Littoral zone  
B. Creek  
C. Watershed **C**  
D. Limnetic zone
- 40 Carrying Capacity is...  
A. The size of the population in an ecosystem  
B. The amount of surface water available  
C. The length of time an ecosystem can support a population  
D. The maximum population size that a particular environment can support **D**

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- 41 A clinometer is a tool to measure what?  
A. Tree height A  
B. Tree diameter  
C. Tree density  
D. Tree species
- 42 where a source of fresh water, such as a river, meets the ocean creating a protected area for young crustaceans, mollusks and fish...  
A. Marsh  
B. Playa  
C. Estuary C  
D. Tidal zone
- 43 The process by which plants convert water and carbon dioxide into sugar is called...  
A. Respiration  
B. Photosynthesis B  
C. Transpiration  
D. CO<sub>2</sub> Fixation
- 44 A lentic habitat in a freshwater biome is one in which...  
A. water is not moving A  
B. water is deep  
C. water is moving swiftly  
D. water is shallow
- 45 Which of the following terms is not a major threat to global biodiversity?  
A. habitat fragmentation  
B. invasive species  
C. habitat connectivity C  
D. urban expansion
- 46 The order of strata or layers of vegetation in a forest from the top down are:  
A. canopy, herb layer, shrub layer, forest floor  
B. decomposition layer, shrub layer, canopy, herb layer  
C. decomposition layer, herb layer, understory layer, shrub layer  
D. canopy, shrub layer, herb layer, forest floor D
- 47 In the past 500 million years there have been \_\_\_\_ mass extinctions



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- A. 5 **A**  
B. 3  
C. 7  
D. 2
- 48 One of the negative effects of air pollution is that it can cause problems in the ozone layer. Which class of chemicals are known to deplete ozone?  
A. nitrogen  
B. chlorofluorocarbons (CFCs) **B**  
C. carbon dioxide  
D. methane
- 49 Name the two types of sources of water pollution?  
A. ecological and anthropogenic  
B. non-agricultural and agricultural  
C. biological and chemical  
D. non-point source pollution and point source pollution **D**
- 50 Contributions to medicine and agriculture, maintaining ecosystem goods and services, and enabling organisms and ecosystems to adapt to environmental changes are all benefits of...  
A. Keystone species  
B. Ecological hot spots  
C. Biodiversity **C**  
D. Exotic species