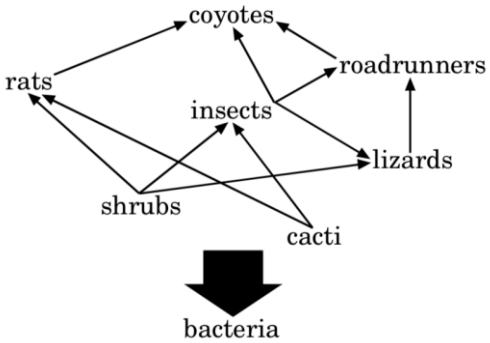
Environmental and Natural Resources Career Development Event
General Knowledge Test
2018

Use this diagram of a food web to answer the next five questions



1) In which biome is this food web most likely to be found?
    a. Forest
    b. Desert
    c. Grassland
    d. Urban

2) What is the function of bacteria in this food web?
    a. Decomposers
    b. Producers
    c. Primary consumers
    d. Secondary consumers

3) If these organisms were arranged in a food pyramid, which organism would have the least amount of total energy available?
    a. Coyote
    b. Insect
    c. Lizard
    d. Shrub

4) Which population would increase most if the insects were eliminated?
    a. Decomposers
    b. Producers
    c. Primary consumers
    d. Secondary consumers

5) Which of the following populations begins the flow of energy through the food web?
    a. Coyotes
    b. Insects
    c. Lizards
    d. Shrub

6) Two environmentally sound methods of solid waste disposal are
    a. Incineration and sanitary landfills
    b. Ocean dumping and sanitary landfills
    c. Town dumps and sanitary landfills
    d. Compaction and town dumps
    e. Town dumps and recycling centers

7) Which of the following is a consequence of compaction?
    a. Increased soil salinity
    b. Increased weathering of rocks
    c. Decreased absorption of water
    d. Decreased soil fertility

8) Air is
    a. 78 percent argon
    b. 21 percent nitrogen
    c. 21 percent oxygen
    d. 10 percent carbon dioxide

9) The largest soil particle is
    a. Clay
    b. Gravel
    c. Sand
    d. Silt

10) Brackish water is
    a. Colored black
    b. Located in tidal areas
    c. Collected from small creeks and branches
    d. Mostly high in salinity (20-34 ppt)

11) This type of erosion can be responsible for up to 95 percent of soil loss.
    a. Splash Erosion
    b. Sheet Erosion
    c. Gully Erosion
    d. Wind Erosion

12) What role do forests have in the environment?
    a. Filter groundwater
    b. Prevent soil erosion
    c. Convert carbon dioxide into oxygen
    d. Provide wildlife habitat
    e. All of the above

13) The horizon that is most supportive of plant growth is
    a. Horizon O
    b. Horizon A
    c. Horizon B
    d. Horizon C

14) _____ is a species of fish adapted to cold, running water in streams.
    a. Carp
    b. Catfish
    c. Trout
    d. Sunfish

15) Ecosystems that are characterized by partially enclosed coastal bodies of water where salty seawater mixes with freshwater from streams and rivers are called?
    a. Euphotic zones
    b. Coral reefs
    c. Estuaries
    d. Benthic zones

16) _____ is the sequential replacement of species in an ecosystem which underwent an artificial or natural disturbance.
    a. Primary succession
    b. Secondary succession
    c. Tertiary succession
    d. None of the above

17) Which of the following is NOT one of the four basic elements of a habitat?
    a. Macronutrients
    b. Space
    c. Shelter
    d. Food
    e. Water

18) What is ecology?
    a. A complex network of living and nonliving organisms
    b. The branch of science dealing with the complex relationships of nonliving organisms
    c. The branch of science dealing with the complex relationships of living things and the environment
    d. The branch of science dealing only with natural resources
    e. The branch of science dealing with nature's effect of living things

19) Define riparian area.
    a. The grassy areas located along the borders of a field
    b. Land and vegetation adjacent or near the banks of a waterway
    c. Areas that are covered with water at least part of the year
    d. The ridge or high area from which water drains either toward or away from a watershed

20) A snag tree is most commonly defined as a
    a. Live standing tree that shelters wildlife and is a valuable timber source
    b. Dead tree which is also a shelter for wildlife but is of little to no timber value
    c. Live tree that is hollow or contains holes large enough to shelter wildlife
    d. None of the above

21) Fish that migrate between freshwater and saltwater are called?
    a. Diadromous
    b. Desalination
    c. Flocculation
    d. Hygrophyte

22) Transpiration is
    a. The process when a plant absorbs water into its roots and then gives off water vapor through the pores in its leaves
    b. The process of water filtering down through aerated soil due to gravity
    c. The process of turning from liquid to vapor
    d. The process of precipitating a substance from a solution

23) Which of the following is considered a non-exhaustible resource?
    a. Solar energy
    b. Geothermal sources
    c. Tidal energy
    d. Wind power
    e. All of the above

24) What percentage of the average soil are minerals?
    a. 25 percent
    b. 45 percent
    c. 5 percent
    d. 10 percent

25) Which of the following is considered the largest contributor to the problem of acid precipitation?
    a. Sulfur
    b. Sulfur Dioxide
    c. Sulfur Monoxide
    d. None of the above

26) What is the first step in the chemical breakdown by bacteria during the nitrification process?
    a. Ammonia to nitrates
    b. Ammonia to nitrites
    c. Nitrates to nitrites
    d. Nitrites to nitrates

27) Which of the following is a primary producer?
    a. cows
    b. trees
    c. blue crab
    d. striped bass

28) Contaminants of food and water include
    a. Registered pesticides
    b. Contact by cockroaches
    c. Feces and urine
    d. All of the above

29) The product of decaying plant or animal matter is
    a. Chlorofluorocarbons
    b. Methane
    c. Nitrous oxide
    d. Ozone

30) Decay of organic matter is caused by
    a. Large animals
    b. Microbes
    c. Rodents
    d. Water

31) The land class with the fewest limitations is
    a. Class I
    b. Class III
    c. Class VI
    d. Class VIII

32) There are about _____ acres of productive forests in the continental United States
    a. 105 million
    b. 235 million
    c. 500 million
    d. 751 million

33) The most important commercial species of trees in the United States is
    a. Oak
    b. Douglas fir
    c. Redwood
    d. Walnut

34) A forest that has never been harvested is called
    a. Virgin
    b. Hardwood
    c. Clear cut
    d. Seedling

35) The seed-tree method of harvesting
    a. Cuts all trees over a certain diameter
    b. Cuts all trees under a certain diameter
    c. Cuts about one-third of the trees in a woodlot
    d. Cuts all but a few trees left for seed

36) Forest wildlife generally survive best in forest that are
    a. Of mixed-age trees
    b. Deciduous
    c. Evergreen
    d. Of even age trees

37) Trees going along streams help to
    a. Regulate water flow
    b. Provide food for aquatic wildlife
    c. Regulate stream temperatures
    d. All of the above

38) When two species of wildlife live together for the benefit of both, the relationship is called
    a. Mutualism
    b. Predation
    c. Commensalism
    d. Competition

39) Wetlands should be made up of about _____ shallow, standing water for optimum wildlife use.
    a. One fourth
    b. One third
    c. One-half
    d. Two-thirds

40) The highest salinity level is measured in
    a. Pond water
    b. Irrigation water
    c. Creeks
    d. Ocean water

41) A fish death can occur when a pond "rolls over"
    a. Because of the temperature shock
    b. Because the sages sink to the bottom
    c. Because of low levels of dissolved oxygen
    d. Because the fish turn upside down

42) The rate at which photosynthesis is carried out depends on
    a. The amount of fertilizer in the water
    b. The amount of oxygen in the atmosphere
    c. The amount of respiration carried on during the daylight hours
    d. The intensity, temperature and concentration of carbon dioxide

43) Conservation is best defined as…
    a. An attempt to prevent the use or modification of some natural resource.
    b. A natural resource that for all practical purposes will never run out.
    c. The "wise use" of our natural resources to provide as much usefulness as possible to people both now and in the future.
    d. A social or political activity intended to benefit a Natural Resource.

44) Slope, texture, flood hazard, and drainage are used to describe physical properties of …
    a. Soils
    b. Forestry
    c. Watersheds
    d. None of the Above

45) Which of these would be considered a keystone species?
    a. Grey wolf
    b. White-footed mice
    c. White-tailed deer
    d. Red fox

46) _____ is the process by which an organism maintains a fairly constant internal environment when the external environment changes.
    a. Homeostasis
    b. Periodicity
    c. Poikilotherm
    d. Homeotherm

47) This made it a federal offense to transport illegally acquired wildlife across state boundaries
    - **a. Lacey Act,1900**
    - b. Migratory Bird Act, 1929
    - c. Lea Act, 1948
    - d. Pitman-Robertson Act, 1950

48) The ability of a given area to provide food, water, and shelter for the population of a given animal is defined as:
    - a. Maximum daily load
    - **b. Carrying capacity**
    - c. Resource consumption
    - d. Minimum viable population

49) _____ is a special type of wetland that may only last for a few months each year.
    - **a. Vernal pool**
    - b. Excavated pond
    - c. Embankment pond
    - d. None of the above

50) Chlorophyll is important in plants because it
    - a. Creates an atmosphere where it can determine the osmotic pressure
    - b. Allows the plant to make good xylem tissue
    - **c. Allows photosynthesis to occur**
    - d. Is also known as the chloroplasts

National FFA Organization

Environmental and Natural Resources Career/Leadership Development Event

GENERAL KNOWLEDGE EXAM KEY—2019

1. What is the branch of science that deals with the complex relationships between living things and their environment?
   A. Biology
   B. Ecology
   C. Ichthyology
   D. Geology

2. How does energy move through ecosystems on earth?
   A. From the sun to consumers and producers
   B. From the sun to consumers to producers then back to consumers
   C. From sun to producers to consumers to decomposers
   D. From the sun to decomposers to producers to consumers

3. Which of the following is a renewable or inexhaustible resource?
   A. Atmosphere
   B. Minerals
   C. Natural gas
   D. Petroleum products

4. Which of the following is an exhaustible resource?
   A. The atmosphere
   B. Water being replenished by the hydrologic system
   C. Solar energy
   D. Forest

5. Ecosystems are.....
   A. Complex relationships among living things and their environment.
   B. Complex relationships among nonliving organisms.
   C. Natural resources.
   D. Complex networks of living and nonliving organisms in which each organism may be affected by the others.

6. Natural resources.....
   A. Are only important to plants and animals.
   B. Are not important to humans.
   C. Are important to humans because they rely upon them for everyday life.
   D. Are important to the United States' international trade policy.

7. What is the process by which plant leaves emit water into the atmosphere?
   A. Condensation
   B. Precipitation
   C. Respiration
   D. Transpiration

8. Carbon is returned to the environment by decomposers feeding on dead matter, waste and subsequently releasing carbon dioxide through the process of_____.
   A. Condensation
   B. Evaporation
   C. Respiration
   D. Transpiration

9. Approximately 78% of the earth's atmosphere is made up of _____ .

   A. Carbon dioxide

   B. Nitrogen

   C. Oxygen

   D. Water

10. The primary source of food energy in a food chain comes from _____.

   A. Consumers

   B. Decomposers

   C. Producers

   D. Water

11. Nitrates are _____.

   A. Common gases found in the atmosphere

   B. Formed from the decomposing of dead organisms and animal wastes

   C. Man-made fertilizers utilized in the production of the food we eat

   D. Not useful to plants until converted to nitrites

12. Plants that undergo the process of nitrogen-fixing by absorbing nitrogen gas and converting it to nitrates are called _____.

   A. Cool season grasses

   B. Legumes

   C. Nitrators

   D. Warm season grasses

13. Abiotic factors influencing ecosystems include…

   A. Food chains and the loss of heat at each step

   B. Producers, consumers and decomposers

   C. The living parts of an ecosystem

   D. Water, soil, air, climate and space

14. The gradual transformation of a pond into a bottomland forest over the passage of years is an example of…

    A. Community rather than an ecosystem

    B. Ecological succession

    C. Ecological transformation

    D. Limiting factors

15. Consumers in an ecosystem

    A. Are the beginning of any food chain

    B. Cannot make their own food

    C. Manufacture their own food

    D. Outnumber the producers in the world

16. Close interaction between organisms of different species over an extended period of time in which one individual benefits while the other individual neither benefits nor is harmed by the relationship, is known as:

    A. Competition

    B. Commensalism

    C. Mutualism

    D. Parasitism

17. The build up of plant nutrients in a body of water, which leads to excessive algae growth, is called _____.

    A. Competition

    B. Eutrophication

    C. Nitrification

    D. Succession

18. What soil particle holds water the tightest and has the least permeability?

A. Clay

B. Gravel

C. Sand

D. Silt

19. The best way to determine soil texture in the field is by …

A. Kicking the soil with you shoe and seeing how it crumbles

B. Looking at the color

C. Using the "Ribbon Test"

D. Weighing the soil sampled

20. The process of bacteria changing dead organisms into ammonia, then to nitrites and finally to nitrates useful to plants is called _____.

A. Ammonification

B. Electrolysis

C. Eutrophication

D. Nitrification

21. What are the four textural classes in the textural triangle?

A. Gravel, sand, silt and clay

B. Sand, silt, clay and topsoil

C. Sand, silt, clay and loam

D. Sand, silt, clay and platy

22. Which soil type tends to be very low in the ability to hold nutrients, however they are very high in permeability?

A. Clay soils

B. Loam soils

C. Sandy soils

D. Silty soils

23. An example of geological soil erosion is.....
    A. A shortage in food due to poor soil fertility
    B. Glaciers forming rivers, leveling mountains, filling valleys, forming lakes and depositing soil
    C. Loss of plants due to lack of water
    D. Water washing off of a field because soil was plowed on a slope

24. Which of the following is not a process of soil degradation?
    A. Nitrogen fixation
    B. Salinization
    C. Soil erosion
    D. Soil pollution

25. Which of the following is not a benefit of soil organic matter?
    A. Improves the permeability of soil
    B. Improves soil tilth
    C. Improves water infiltration into soil
    D. Kills all microorganisms in the soil

26. Which of the following items are not considered to be a factor, that influences the toxicity of chemicals?
    A. Absorbed dose
    B. Frequency of exposure
    C. Length of exposure
    D. Weather conditions

27. Which of the following items is not found on a chemical label?
    A. Directions
    B. Ingredients
    C. Precautions
    D. Safety tests

28. Which sphere contains all of the plan and animal life on the earth's surface?

A. Atmosphere

B. Biosphere

C. Hydrosphere

D. Lithosphere

29. The process that changes water from a gas to a liquid is called _____.

A. Condensation

B. Evaporation

C. Respiration

D. Transpiration

30. Air pollutant that adheres to precipitation and falls to the earth is called_____.

A. Acid rain

B. Bleaching

C. Leachate

D. Leaching

31. Pollution caused by discharging heated water into rivers and streams is created by _____.

A. Inorganic pollution

B. Organic waste

C. Radioactive materials

D. Thermal pollution

32. The function of a watershed is to…
    A. Protect potable water tanks from the weather
    B. Protect water from contaminants
    C. Shelter a water pump
    D. Release a consistent flow of water throughout the year

33. A pH of 7 is considered…
    A. Acidic
    B. Basic
    C. Neutral
    D. 7ppm

34. A measurement of the total concentration of all dissolved ions in water is…
    A. Acidity
    B. Alkalinity
    C. Salinity
    D. Temperature

35. Groundwater that is unavailable for plant root absorption is called…
    A. Capillary water
    B. Free water
    C. Gravitational water
    D. Hygroscopic water

36. Which of the following terms is not considered to be a physical property of soil?
    A. Drainage
    B. Slope
    C. Soil solution
    D. Texture

37. Low biotic potential is defined as…

A. A high susceptibility to poisons in the environment

B. A slow reproductive rate

C. The failure to adapt well to a changing environment

D. The production of large numbers of offspring each year

38. A wildlife population that is forced to feed, water or travel too great a distance from its escape cover is likely to encounter a high rate of…

A. Growth

B. Mortality

C. Reproduction

D. Survival

39. A group of ecosystems within a region that have similar types of vegetation and similar climate conditions is…

A. A biome

B. An estuary

C. A habitat

D. A stratum

40. Water that is clouded with suspended particles of silt is described as…

A. Clean

B. Salty

C. Stratified

D. Turbid

41. The world's largest biome is the _____ biome.

A. Coniferous forest

B. Freshwater

C. Marine

D. Temperate forest

42. The biggest component of municipal waste is…

A. Paper

B. Plastics

C. Metals

D. Yard waste

43. Which of the following is not a characteristic that defines hazardous waste?

A. Biodegradable

B. Corrosive

C. Reactive

D. Toxic

44. Which of the following is not a renewable resource?

A. Forest

B. Plants

C. Soil

D. Wildlife

45. The practice of using natural resources while protecting against harm and waste is called…

A. Biotechnology

B. Conservation

C. Preservation

D. Resource renewal

46. The practice of maintaining an environment and the resources within it in their natural state simply because we value them is called…

A. Biotechnology

B. Conservation

C. Preservation

D. Resource renewal

47. The number of a particular species of plants or animals in a given area at a specific point in time is an example of

A. Biologistics

B. Carrying capacity

C. Food Chain capacity

D. Population level

48. Primary succession occurs when…

A. An ecosystem is damaged or partly destroyed

B. Plants displace animals from an environment

C. Organisms live in an area where they did not live before

D. Remnant of former community still exist

49. The ability of an organism to survive environmental fluctuations from the norm in an environment is a demonstration of its

A. Comfort zone

B. Competitive exclusion principle

C. Niche

D. Range of tolerance

50. The most simple arrangement of organisms in an environment in a ranking order that connects all of the producers to the primary and secondary consumers is called a…

A. Food chain

B. Food network

C. Food pyramid

D. Food web

1. What is the area of Earth that supports life called?
   a. The atmosphere
   b. The biosphere
   c. The hydrosphere
   d. The rhizosphere

2. All the parts of a particular environment form a(n) _____; some parts living and others nonliving.
   a. Biosphere
   b. Ecosystem
   c. Habitat
   d. Niche

3. Effluent water is described as…
   a. Particulate polluted water.
   b. Water that erodes soil.
   c. Water that is discharged from factories or farms.
   d. Water that is a source of point source pollution.

4. The term "biodegradable" refers to materials that can be broken down such as newspapers. "Bio" in this term refers to what?
   a. **Bacteria breaking down these materials**.
   b. Environmental factors breaking down these materials.
   c. Pollution breaking down these materials.
   d. Toxins breaking down these materials.

5. Material that is the result of decomposition of organic matter is…
   a. Agricultural pollution
   b. Compost
   c. Liquid
   d. Toxic

6. A type of resource that can be replaced or recreated once they are used.
   a. Exhaustible
   b. Fuel
   c. Nonrenewable
   d. Renewable

7. _____ are living and nonliving things found on Earth that people need.
   a. Fossil fuels
   b. Natural resources
   c. Nonrenewable resources
   d. Renewable resources

8. In the hydrologic cycle, evaporation and transpiration would cause which of the following?
   a. Ground water
   b. Oceans
   c. Precipitation
   d. Rivers

9. The most abundant element in Earth's atmosphere
   a. Argon
   b. Iron
   c. Nitrogen
   d. Oxygen

10. Acid rain is associated with which of the following?
   a. Burning of fossil fuels
   b. Damage to the tropical rain forests
   c. Formation of the Antarctic ozone hole
   d. Release of PCBs into the atmosphere

11. Dissolved Oxygen (DO) is an important water quality measurement. If there is an excess amount of decaying plant material in a body of water will this affect DO levels?
   a. This will raise the levels of DO in the water
   b. This will lower the levels of DO in the water
   c. This will have no effect on the levels of DO in the water
   d. This will block sunlight and limit photosynthesis which will increase DO levels.

12. Soil texture describes…
   a. The aeration of the soil
   b. The arrangement of the soil particles into shapes or pieces
   c. The physical condition of the soil
   d. **The proportion of sand, silt and clay in the soil**

13. Which of the following statements is true when referring to soil particles?
   a. Clay is the largest particle in soil
   b. Clay is the smallest particle in soil
   c. Clay is smaller than sand but larger than silt
   d. Silt is the smallest particle in soil

14. Which of the following soils has the most water holding capacity?
   a. Soils high in sand content
   b. Soils that have an even amount of sand and silt
   c. Soils that have a high clay content
   d. Soils that have more mineral content

15. Which of the following would be typical of very little to no slope for a piece of land?
    a. Dries out quickly
    b. Experiences faster runoff
    c. Loses fertile top soil to erosion
    d. May stay wet longer and limit decay of organic matter

16. Water quality is less affected by
    a. Chemical runoff
    b. Fish density
    c. Fish species
    d. Weather

17. When two species of wildlife live together for the benefit of both, the relationship is called
    a. Commensalism
    b. Competition
    c. Mutualism
    d. Predation

18. Which relationship refers to a plant or animal that lives in, on, or with another sharing its food, but not helping or harming it?
    a. Commensalism
    b. Competition
    c. Mutualism
    d. Predation

19. Soil pH is generally raised by adding…
    a. Complete fertilizer
    b. Lime
    c. Nitrogen
    d. Sulfur

20. In which of the following soil horizons is parent material usually found in?
    a. Horizon A
    b. Horizon B
    c. Horizon C
    d. All of the above

21. What is an organism called that is sensitive to pollution and is used to determine the suitability of a living environment?
    a. Indicator species
    b. Invasive species
    c. Limiting factor
    d. Native species

22. An overly wet soil is often low in productivity. Which of the following are true in these wet soils?
    a. Fungi and bacteria are present in too great of number to be beneficial
    b. Little or no air can penetrate the soil
    c. Organic matter decomposes too quickly to be of a benefit to plants
    d. Tend to have less natural mineral deposits

23. A soil profile is…
    a. A cross sectional view of soil
    b. Detailed description of a type of soil
    c. Layers of organic material
    d. The unconsolidated material from which soil develops

24. In the air, what filters out harmful ultraviolet rays from the sun?
    a. The greenhouse phenomena
    b. Naturally occurring hydrocarbons
    c. The ozone in the air
    d. Particulates in the air

25. The sulfur in the air combines with oxygen and moisture form _____, which has been found to damage and kill trees and other plants.
    a. Radioactive dust
    b. Radon
    c. **Sulfuric acid**
    d. Sulfur dioxide

26. The process of bacteria changing dead organisms into ammonia, then to nitrite and finally to nitrates which are useful to plants is called _____.
    a. Ammonification
    b. Electrolysis
    c. Nitrification
    d. photosynthesis

27. Nitrous Oxide is a troublesome pollutant, occurring from which of the following major sources?
    a. Decaying plant material
    b. Farming residue
    c. Gasoline engines
    d. Refrigeration units

28. What is the ozone damaging substance?
    a. Carbon dioxide
    b. **Chlorofluorocarbons**
    c. Methane
    d. Nitrous Oxide

29. What is the poisonous gas we cannot remove from auto exhaust?
    a. Carbon dioxide
    b. Carbon monoxide
    c. Hydrocarbons
    d. Nitrous oxides

30. What is the over accumulation of pollutants at successive levels in the food chain called?
    a. Bio adaptability
    b. Biomagnification
    c. Eutrophication
    d. Point source pollution

31. If producers in a food web were removed, which of the following changes would most likely occur?
    a. Consumers of the web would begin making energy for the food web
    b. **the entire food web would collapse over time**
    c. the food web would depend on the decomposers for energy
    d. the populations of the remaining organisms in the food web would increase

32. A food web is different from a food chain because…
    a. animals eat plants in a food web and they do not in a food chain
    b. a food web is a combination of several food chains
    c. decomposers eat animals in a food chain but not in a food web
    d. a food web and a food chain are the same thing

33. Which has the lowest tendency to form clods, the least moisture holding capacity and the least fertility?
    a. clay
    b. loam
    c. sand
    d. silt

34. The amount of dissolved oxygen in warm water is _____ than it is in cold water.
    a. Better
    b. Higher
    c. Lower
    d. Temperature has no effect on dissolved oxygen

35. Lines of longitude _____.
    a. Run in an east/west direction.
    b. Are unequal in length.
    c. Are known as meridians.
    d. Are known as parallels.

36. _____ data includes information pertaining to satellite orbital corrections
    a. Ephemeris
    b. Ionosphere
    c. Multipath
    d. Troposphere

37. _____ errors are known to occur from signal reflection from various nearby objects.
    a. Ephemeris
    b. Ionosphere
    c. Multipath
    d. Troposphere

38. GPS is a constellation of approximately _____ satellites.
    a. 4
    b. 5
    c. 12
    d. 24

39. Prolonged presence of water, hydric soils and presence of hydrophytic plants are characteristics of …
    a. Grasslands
    b. Harwood bottomlands
    c. Tundra
    d. Wetlands

40. Oxygen can be added to a pond by doing which of the following?
    a. Aeration
    b. Adding fertilizer
    c. Adding more fish
    d. Dredging

41. Which of the following atmospheric zones is farthest from the surface of the earth?
    a. Ionosphere
    b. Mesosphere
    c. Stratosphere
    d. Troposphere

42. Which of the following absorbs almost all the ultra-violet radiation that reaches the earth?
    a. Atmosphere
    b. Greenhouse gases
    c. Stratospheric ozone
    d. Tropospheric ozone

43. Which is NOT true about non-renewable resources?
    a. They are finite and non-sustainable
    b. Their exploitation and use will eventually lead to their exhaustion
    c. They cannot be stored for future use
    d. These resources take millions of years to form

44. What is a form of heat energy, which originates deep in the earth's molten interior?
    a. Biomass
    b. Geothermal
    c. Hydropower
    d. Solar

45. Of the following sources, which supplies the most commercial energy in the world today?
    a. Hydroelectric
    b. Oil
    c. Nuclear
    d. Solar

46. Which of the following is an environmental problem associated with abandoned coal mines?
    a. Acid drainage due to leaching of spoil heaps by rainwater
    b. Air pollution caused by smog from ozone formation
    c. Released nutrients that cause eutrophication into streams
    d. Thermal pollution of streams in the area

47. Particulates released into the air from industrial processes affecting air quality, can be removed by the process of _____.
    a. Chemical oxidation
    b. Filtering
    c. Scrubbing
    d. Titration

48. Which of the following is **not** an area of concentration to prevent contamination of groundwater by crop pesticides?
    a. Conservation tillage practices
    b. Improved computer models
    c. Improved pesticide application technology
    d. Overgrazing areas of concern

49. Which of the following is a type of groundwater that is available to plant roots?
    a. Capillary water
    b. Free water
    c. Gravitational water
    d. Hygroscopic water

50. The accumulation of salts in water occurs most often when…
    a. Water collects in a drainage ditch
    b. Water is lost through evaporation
    c. Water runs across agricultural land
    d. Water settles in a pond

2022 ENVIRONMENT AND NATURAL RESOURCES EXAM

1. All the ecosystems of the Earth, when considered as a whole, are called the _____.
   a. Atmosphere
   b. Biomass
   c. Biosphere
   d. Rhizosphere

2. Which of the following processes produces oxygen for an ecosystem?
   a. Digestion
   b. Decomposition
   c. Photosynthesis
   d. Respiration

3. Which process takes place within the individual cells of plants and animals, involving the breakdown of foods into their components along with the release of energy?
   a. Digestion
   b. Decomposition
   c. Photosynthesis
   d. Respiration

4. Which is the most abundant element found in living organisms?
   a. Carbon
   b. Oxygen
   c. Nitrogen
   d. Water

5. Which is the most abundant element in the atmosphere?
   a. Carbon
   b. Oxygen
   c. Nitrogen
   d. Water

6. Plants give up large amounts of water to the atmosphere through a process called _____.
   a. Evaporation
   b. Perspiration
   c. Respiration
   d. Transpiration

7. In environmental science, a "niche" refers to...
   a. When an ecosystem is damaged, but remnants of the former community still exist
   b. When one organism is more able to survive in an environment than another
   c. When an organism did not exist before in an environment but can now
   d. The role the organism fulfills in an environment

8. Primary succession occurs when...
   a. An ecosystem is damaged or partly destroyed
   b. Organisms live in an area where they did not live before
   c. Plants displace animals from an environment
   d. Remnants of a former community still exist

9. The ability of an organism to survive changes in an environment is a demonstration of its...
   a. Comfort zone
   b. Competitive exclusion principle
   c. Niche
   d. Range of tolerance

10. Which of the following forms of energy occurs as a result of photosynthesis?
    a. Chemical
    b. Electrical
    c. Kinetic
    d. Thermal

11. Which of the following is not considered a renewable resource?
    a. Forests
    b. Plants
    c. Soil
    d. Wildlife

12. The practice of using natural resources while protecting against harm and waste is called...
    a. Biotechnology
    b. Conservation
    c. Preservation
    d. Resource renewal

13. The number of a particular plant or animal species in a given area at a specific time is an example of...
    a. Biologistics
    b. Carrying capacity
    c. Multiple use
    d. Population level

14. Which of the following is a product of decaying plant or animal matter?
    a. Chlorofluorocarbons
    b. Methane
    c. Nitrous oxide
    d. Ozone

15. What pollutant compound has been used as an aerosol propellant and refrigeration gas?
    a. Carbon dioxide
    b. Chlorofluorocarbons
    c. Fluorine gas
    d. Radon

16. What part of the stable aerosol compound actually destroys ozone molecules?
    a. Carbon
    b. Chlorine
    c. Fluorine
    d. Hydrogen

17. Which automotive gas cannot be removed with current technologies?
    a. Carbon Dioxide
    b. Carbon Monoxide
    c. Chlorofluorocarbons
    d. Ozone

18. Which of the following best describes the Greenhouse effect?
    a. Accumulation of radioactive gases in the atmosphere
    b. Heat from the earth's crust absorbs, radiates and reflects heat back into the air above, and Earth's atmosphere traps this heat.
    c. Hot exhausts from car emissions as well as other manufacturing releasing compounds that contain nitrogen and oxygen heating up the atmosphere
    d. The thinning of the protective layer in the Earth's atmosphere causing surface temperatures to rise

19. Radon gas is a threat to air quality...
    a. In factories
    b. In homes
    c. In wooded areas
    d. On the highway

20. What are large areas of land where water from rain and snow is absorbed into the soil to emerge as spring water?
    a. Marshes
    b. Water table
    c. Watershed
    d. Wetlands

21. Which of the following is not an indicator species when we refer to water quality?
    a. Algae
    b. Aquatic invertebrates
    c. Ferns
    d. Fish

22. Groundwater that is unavailable for plant root absorption is called?
    a. Capillary
    b. Free
    c. Gravitational
    d. Hygroscopic

23. What is the measure of the total concentration of all dissolved ions in water?
    a. Dissolved Oxygen
    b. pH
    c. Salinity
    d. Turbidity

24. Which of the following is essential for aquatic life and is characteristically absent in groundwaters?
    a. Dissolved Oxygen
    b. pH
    c. Salinity
    d. Turbidity

25. A pH of 7 is considered...
    a. Acidic
    b. Basic
    c. Neutral
    d. 7ppm

26. The process by which water changes from liquid form to a vapor or gas is...
    a. Condensation
    b. Distillation
    c. Evaporation
    d. Precipitation

27. Which of the following soil property refers to the proportions of sand, silt, and clay in a soil?
    a. Drainage
    b. Erosion
    c. Slope
    d. Texture

28. Which soil property refers to the natural ability of the soil to allow water to flow through it?
    a. Drainage
    b. Erosion
    c. Slope
    d. Texture

29. Referring to the most basic use of soil, it provides individual plants with the following except...
    a. Anchorage
    b. Nutrients
    c. Photosynthesis
    d. Water

30. Which of the following soil parent materials is deposited by wind?
    a. Alluvial deposits
    b. Loess deposits
    c. Mineral and Rock
    d. Organic deposits

31. Which of the following soil particles is the smallest?
    a. Clay
    b. Gravel
    c. Sand
    d. Silt

32. Which of the following is not considered a physical property of the soil?
    a. Drainage
    b. Slope
    c. Soil solution
    d. Texture

33. Which class of animals is primarily supported by a grassland habitat?
    a. Carnivores
    b. Herbivores
    c. Omnivores
    d. Producers

34. Which term describes a species that will be expected to survive if immediate steps are taken to protect the environment they live in?
    a. Endangered species
    b. Extinct species
    c. Preserved species
    d. Threatened species

35. When referring to wildlife biology, which of the following terms fits the description of a plant or animal that is in, on, or with another, sharing its food but neither helping nor harming it?
    a. Commensalism
    b. Competition
    c. Mutualism
    d. Predation

36. What is the single greatest threat facing wildlife today and for the foreseeable future?
    a. Air pollution
    b. Climate change
    c. Habitat destruction
    d. Water shortages

37. The following are all factors that contribute to the extinction of a species except for…
    a. Alien species introduction
    b. Introduction of Bioengineered bacteria
    c. Habitat loss
    d. Over-hunting by humans

38. A water habitat in which water tends to stand for long periods of time is called a _____ habitat.
    a. Lentic
    b. Lotic
    c. Murky
    d. Turbid

39. High levels of dissolved mineral in the water such as nitrates and phosphates can cause…
    a. A growth of algae and other plants that benefit the aquatic habitat
    b. A dense blue-green algae bloom and aquatic animals and fish may die
    c. The pH of the water drops very low
    d. The water becomes turbid and cloudy with suspended particles limiting photosynthesis

40. What is the most promising practice for reducing the amount of solid waste deposited in landfills?
    a. Eliminating paper and plastic packaging materials
    b. Eliminating the production of toxic wastes
    c. Recycling waste materials
    d. Reducing consumption of packaged goods

41. What is a combustible gas that Is obtained from decaying vegetation, sewage and animal waste?
    a. Ethanol
    b. Gasohol
    c. Helium
    d. Methane

42. What is the energy source obtained from the heat of the Earth's molten core?
    a. Geothermal power
    b. Methane
    c. Nuclear power
    d. Solar energy

43. Which energy source contributes most to atmospheric pollution?
    a. Ethanol
    b. Methane
    c. Nuclear power
    d. Wood

44. Which of the following energy sources is produced from a biodigester?
    a. Ethanol
    b. Geothermal
    c. Methane
    d. Nuclear

45. When an underground fuel tank has leaked some of its contents into the surrounding soil it is considered...
    a. A causal agent
    b. Non-point source pollution
    c. Point source pollution
    d. Safe because of the soil's ability to absorb toxins

46. Pollution that can be traced back to a specific source is known as...
    a. Carcinogenic
    b. Mutagenic
    c. Non-point source pollution
    d. Point source pollution

47. Which of the following is not considered to be a route of entry for hazardous material?
    a. Digestion
    b. Ingestion
    c. Inhalation
    d. Injection

48. Which of the following soils has the most water holding capacity?
    a. Soils high in sand content
    b. Soils that have an even amount of sand and silt
    c. Soils that have a high clay content
    d. Soils that have more mineral content

49. What is an organism called that is sensitive to pollution and is used to determine the suitability of a living environment?
    a. Indicator species
    b. Invasive species
    c. Limiting factor
    d. Native species

50. Lines of longitude _____.
    a. Run in an east/west direction.
    b. Are unequal in length.
    c. Are known as meridians.
    d. Are known as parallels

ENVIRONMENT & NATURAL RESOURCES CDE

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Written Exam Key- 2022

Question	Answer	Point Value	Standard	Standard	Standard
1.	C	2			
2.	C	2			
3.	D	2			
4.	A	2			
5.	C	2			
6.	D	2			
7.	D	2			
8.	B	2			
9.	D	2			
10.	A	2			
11.	C	2			
12.	B	2			
13.	B	2			
14.	B	2			
15.	B	2			
16.	B	2			
17.	B	2			
18.	B	2			
19.	B	2			
20.	C	2			
21.	C	2			
22.	D	2			
23.	C	2			

24.	A	2			
25.	C	2			
26.	C	2			
27.	D	2			
28.	A	2			
29.	C	2			
30.	B	2			
31.	A	2			
32.	C	2			
33.	B	2			
34.	D	2			
35.	A	2			
36.	C	2			
37.	B	2			
38.	A	2			
39.	B	2			
40.	C	2			
41.	D	2			
42.	A	2			
43.	D	2			
44.	C	2			
45.	C	2			
46.	D	2			
47.	A	2			
48.	C	2			
49.	A	2			
50.	C	2			

Key Environmental and Natural Resource Exam 2023

1. We call all the ecosystems of the Earth as a whole a _____.
    a. **Biosphere**
    b. Community
    c. Population
    d. Universe
2. A group of similar organisms that is found in a defined area is known as a _____.
    a. Community
    b. Family
    c. Herd
    d. **Population**
3. Which of the following is an abiotic feature of a particular ecosystem?
    a. Bacteria
    b. Rodents
    c. Trees
    d. **Water**
4. A branch of science that deals with the complex relationships among living things and their environment is…
    a. Conservationist
    b. **Ecology**
    c. Environmentalism
    d. Taxonomy

5. Primary succession occurs when…
    a. An ecosystem is damaged or partly destroyed
    b. **Organisms live in an area where they did not live before**
    c. Plants displace animals from an environment
    d. Remnants of a former community still exist
6. The ability of a particular organism to survive more easily in a shared environment than another is an example of …
    a. Adaptive superiority
    b. **A competitive advantage**
    c. The competitive exclusion principle
    d. Secondary succession
7. The ability of an organism to survive changes in an environment is a demonstration of its
    a. Comfort zone
    b. Competitive exclusion principle
    c. Niche
    d. **Range of tolerance**
8. Which of the following forms of energy occurs as a result of photosynthesis?
    a. **Chemical**
    b. Electrical
    c. Kinetic
    d. Thermal

9. Which is the process by which organic matter (plant or animal tissue) is reduced to organic compounds?
    a. **Decomposition**
    b. Photosynthesis
    c. Respiration
    d. Synthesis
10. Herbivores are also considered _____
    a. Carnivores
    b. **Primary consumers**
    c. Producers
    d. Secondary consumers
11. Which of the following is a secondary consumer?
    a. **Carnivore**
    b. Food plant
    c. Herbivore
    d. Producer
12. Population levels in an ecosystem cannot typically exceed the _____ for a sustained period of time.
    a. Carnivorous population
    b. **Carrying capacity**
    c. Non-exhaustible resources
    d. Renewable resources
13. A term describing a resource that is capable of replacing itself through reproduction or new growth is…
    a. Conservation
    b. Nonrenewable resource
    c. **Renewable resource**
    d. Recycling

14. The number of a particular species of plant or animal in a given area at a specific point in time is an example of…
    a. Biologistics
    b. Carrying capacity
    c. Multiple use
    d. **Population level**
15. Which of the following is not a renewable resource?
    a. Forest
    b. Plants
    c. **Soil**
    d. Wildlife
16. What element combines with moisture to form acid rain?
    a. Carbon
    b. Hydrogen
    c. Lead
    d. **Sulfur**
17. A product of decaying plant or animal matter is…
    a. Chlorofluorocarbons
    b. **Methane**
    c. Nitrous oxide
    d. Ozone
18. Air is…
    a. 10 % carbon dioxide
    b. 21 % nitrogen
    c. **21% oxygen**
    d. 78% argon

19. Pure water is…
    a. A mixture of gases
    b. Metallic tasting
    c. One part hydrogen to two parts oxygen
    d. **Odorless**
20. A measurement of the total concentration of ions in water is…
    a. Acidity
    b. Alkalinity
    c. **Salinity**
    d. Temperature
21. A Secchi disk is used to measure what?
    a. Air pollution
    b. Slope
    c. **Turbidity of water**
    d. Wind velocity
22. A clinometer is used to measure…
    a. Air pollution
    b. **Slope**
    c. Turbidity of water
    d. Wind velocity
23. The function of a watershed is to…
    a. Protect potable water from weather
    b. Protect water from contaminants
    c. **Release a consistent flow of water throughout the year**
    d. Shelters a water pump

24. Natures natural water treatment like facilities include all but which of the following…
    a. Estuaries
    b. **Golf course ponds**
    c. Marshes
    d. Swamps
25. When does water lose its oxygen holding capacity?
    a. When an algae bloom is present
    b. In cooler temperature
    c. **As water warms**
    d. In lower altitudes
26. Groundwater that is unavailable to plant roots is called…
    a. Capillary water
    b. Free water
    c. Gravitational water
    d. **Hygroscopic water**
27. The process by which water changes from liquid form to a vapor or gas is…
    a. Condensation
    b. Distillation
    c. **Evaporation**
    d. Precipitation
28. As a medium for plant growth, which of the following is not provided by the soil?
    a. Anchorage
    b. **Energy**
    c. Nutrients
    d. Water

29. The tendency of soil particles to break apart as erosion occurs is called…
    a. Decomposition
    b. **Erodibility**
    c. Illuviation
    d. Weathering
30. 40% of soil loss in the United States is due to …
    a. Crop production
    b. Forest fires
    c. Floods
    d. **Wind erosion**
31. Which of the following soil parent materials is deposited by wind?
    a. Alluvial deposits
    b. **Loess deposits**
    c. Mineral and rocks
    d. Organic deposits
32. Which term is not considered to be a physical property of the soil?
    a. Drainage
    b. Slope
    c. **Soil solution**
    d. Texture
33. A learned behavior that improves the chances for a wild animal to survive is also known as…
    a. **Adaptive behavior**
    b. Erratic behavior
    c. Manipulative behavior
    d. Nonadaptive behavior

34. When two species of wildlife live together neither helping or harming the other, the relationship is called…
    a. **Commensalism**
    b. Competition
    c. Mutualism
    d. Parasitism
35. The greatest single cause of extinction is…
    a. An alien species
    b. **Destruction or modification of habitat**
    c. Nonadaptive behavior
    d. Overharvesting
36. Low biotic potential is defined as…
    a. Failure to adapt well to a changing environment
    b. High susceptibility to poisons in the environment
    c. Over production of offspring each year
    d. **Slow reproductive rate**
37. Which of the following biomes is the largest?
    a. Dessert biome
    b. Grassland biome
    c. **Marine biome**
    d. Temperate forest biome
38. A water habitat in which water tends to stand for long periods of time is called a _____ habitat.
    a. **Lentic**
    b. Lotic
    c. Murky
    d. Turbid

39. An organism that reproduces only once in its lifetime is said to be…
    a. Iterparous
    b. Promiscuous
    c. Monogamous
    d. **Semelparous**
40. Fecundity refers to the
    a. Carrying Capacity
    b. **How fertile a species is**
    c. Mortality of a population
    d. Semelparous species
41. A group of ecosystems within a region that have similar types of vegetation and similar climatic conditions is
    a. **A biome**
    b. A habitat
    c. A stratum
    d. A zone
42. What is the biggest component of municipal waste?
    a. Metals
    b. **Paper**
    c. Plastics
    d. Yard waste
43. All of the following occur during attenuation except…
    a. Adsorption
    b. Biological removal
    c. **Containment**
    d. Filtration

44. The most important characteristic of containment landfill is…
    a. Maximum degradation of waste materials
    b. **Minimum seepage**
    c. Proximity to population centers
    d. Soil type
45. Pollution that can be traced back to a specific source is known as…
    a. Carcinogenic
    b. Mutagenic
    c. Non-point source pollution
    d. **Point source pollution**
46. The pH of a toxic material is related to which of the following terms?
    a. **Corrosivity**
    b. Ignitability
    c. Reactivity
    d. Toxicity
47. When a waste material gives off fumes, and you inhale or absorb the contaminant through your lungs and skin this is known as
    a. **Direct exposure pathway**
    b. Indirect exposure pathway
    c. Mutagenic effect
    d. Teratogenic effect

48. What is an organism called that is sensitive to pollution and is used to determine the suitability of a living environment?
    a. **Indicator species**
    b. Invasive species
    c. Limiting factor
    d. Native species
49. Lines of latitude _____.
    a. Run in a north and south direction
    b. Are equal in length
    c. Are known as meridians
    d. **Are known as parallels**
50. Which of the following soils has the most water holding capacity?
    a. Soils high in sand content
    b. Soils that have an even amount of sand and silt
    c. **Soils that have a high clay content**
    d. Soils that have more mineral content