

---

Student Name \_\_\_\_\_

Class \_\_\_\_\_

## Section 1 – Relationships

## Ecosystems – Biotic/Abiotic – Species/Population/Community - Basic Needs

1. An ecosystem thrives with biotic & abiotic parts. An example of an **abiotic** part of an ecosystem is ...
  - A. lichen
  - B. fungus
  - C. minerals
  - D. fern plants
2. Which of the following should be classified as a **community** ?
  - A. A wetland marsh
  - B. A flock of birds
  - C. A pack of wolves
  - D. A school of dolphins
3. Living things have basic needs. Throughout the first section in this unit the **needs of living things** were examined in depth. The four basic needs of living things are:
  - A. food, clothing, oxygen, love
  - B. oxygen, water, food, habitat
  - C. water, oxygen, habitat, protection
  - D. food, water, habitat, space

## Relationships – Adaptations

4. A particular relationship where one organism benefits (like a tree orchid – which receives access to sunlight) and the other organism (the tree) is not harmed or helped is called ...
  - A. divisionism
  - B. parasitism
  - C. mutualism
  - D. commensalism
5. The relationship where both organisms help each other - such as the goby fish and the snapping shrimp is called ...
  - A. partnerism
  - B. parasitism
  - C. mutualism
  - D. commensalism
6. Because some of the lamprey's victims die after it has attached itself to its host, the relationship that exists is considered to be ...
  - A. dependent
  - B. parasitism
  - C. mutualism
  - D. commensalism

## Human impacts on ecosystems – garbage

7. The beaver population in **Yoho National Park** has declined due to ...
  - A. more hunting permits
  - B. lower water flow
  - C. fewer forest fires
  - D. more Aspen trees

8. **100,000 toads** are killed on highways in England each year. To prevent the extinction of this population the government has provided ...
- A. **protective gear for the toads**
  - B. **toad resistant tires for the cars**
  - C. **tunnels for them to cross the highway**
  - D. **bridges for them to cross the highway**
9. A clay liner and a system of pipes is used in a sanitary landfill to ...
- A. **prevent leakage**
  - B. **recycle waste**
  - C. **restore oxygen**
  - D. **prevent disease**

## Section 2 – Energy Flow

### Consumers/producers – photosynthesis – cellular respiration – scavengers/decomposers

10. Organisms in an ecosystem can be classified as **producers** or **consumers**. The producers provide food for the consumers. An organism that consumes both producers and other consumers is called a ...
- A. **herbivore**
  - B. **omnivore**
  - C. **carnivore**
  - D. **prey**
11. Which of the following word equations describes **cellular respiration** ?
- A. **Light energy + carbon dioxide + water → food + oxygen**
  - B. **Food + oxygen → carbon dioxide + water + energy**
  - C. **Light energy + oxygen + carbon dioxide → water + food**
  - D. **Food + carbon dioxide + energy → water + oxygen**
12. **Decomposers** – known as the clean-up crew - are the decomposers. Scavengers also get rid of the waste in an ecosystem. **Scavengers** differ from decomposers because they ...
- A. **do not kill organisms for food**
  - B. **do not eat dead organisms**
  - C. **break down larger organisms**
  - D. **only feed on living plants and animals**
13. Which of the following decomposers are helpful?
- A. **Baker's yeast and E coli**
  - B. **Candida albicans and nitrogen-fixing nodules**
  - C. **E coli and E coli 0157:H7**
  - D. **Candida albicans and Baker's yeast**

### Food chains – energy flow

14. Rank the following members of an ecosystem **Carnivores – Herbivores - Producers** in term of their numbers. Highest to lowest
- A. **Herbivores - Producers - Carnivores**
  - B. **Herbivores - Carnivores - Producers**
  - C. **Producers - Carnivores - Herbivores**
  - D. **Producers - Herbivores - Carnivores**
15. A plant uses most of the energy it gets from the Sun to support it's life functions. The following percentage represents the amount of energy that a plant provides to a consumer, such as a herbivore.
- A. **5 %**
  - B. **10 %**
  - C. **15 %**
  - D. **20 %**
16. What happens to '**waste**' **energy** in an ecosystem?
- A. **It is absorbed by plants**
  - B. **It is absorbed by animals**
  - C. **It is used as recycled energy**
  - D. **It is given off into the atmosphere**

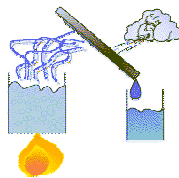
## Food webs

17. The members of different food webs are interdependent. When changes in these occur in an ecosystem food web, which of the following would affect the members of that food web?
- A. Biotic factors only
  - B. Abiotic factors only
  - C. Both abiotic and biotic factors
  - D. Neither biotic nor abiotic factors
18. **Food chains and food webs** are models in science, which visually show us the different relationships within an ecosystem. The primary difference between the food chain and the food web is ...
- A. a food chain shows how energy is stored
  - B. a food web shows how energy is used
  - C. a food web is a complex system of food chains
  - D. a food chain is a combination of different food webs
19. In the meadow food web, what would happen to the owl, if a pesticide killed all of the grasshoppers?
- A. Nothing, because owls don't eat grasshoppers
  - B. They would get sick and die
  - C. All the organisms in the food web will die
  - D. Their population would likely increase

## Cycles (water and carbon)

20. All living things need water to live. The water cycle has four main processes. The two processes that return water to the earth are ...
- A. evaporation and condensation
  - B. condensation and precipitation
  - C. transpiration and condensation
  - D. evaporation and transpiration
21. The process in which water, goes through a change of state, from a gas to a liquid, is called ...
- A. evaporation
  - B. transpiration
  - C. condensation
  - D. precipitation

22.



This illustration represents the desalination of water. Salt is removed from the water in this process.

Which cycle on the Earth does this illustration represent?

- A. The water cycle
- B. The carbon cycle
- C. The nitrogen cycle
- D. The life cycle of aquatic organisms

## Section 3 – Change in Ecosystems

## Investigating the Distribution of Living Things in an Environment

23. Changes occur within ecosystems all the time. Natural disasters or human activity can change an ecosystem forever. The extinction of the Auk occurred around 1844. The cause was ...
- A. a flood
  - B. a meteor
  - C. overhunting
  - D. forest-clearing

24. When students studied their schoolyard to identify what human impact had on the numbers of organisms they recorded their data in a table. Two places where they likely studied were the ...
- A. climbing apparatus and parking lot
  - B. climbing apparatus and the tarmac
  - C. parking lot and the soccer field
  - D. tarmac and the nature garden
25. A long-term change to an ecosystem will likely occur as a result of this type of human impact ...
- A. drought
  - B. flood
  - C. tsunami
  - D. clearing forests

#### Interactions and Changes Occur In Ecosystems

26. The introduction of a new species to an area will likely negatively impact the native species in that area. Scientists call this introduction of new species ...
- A. bioinvasion
  - B. biodiversity
  - C. biohazardous
  - D. biomagnification
27. Purple loosestrife has taken over many wetland and marshy areas. Because this was first introduced from Europe, it is not considered to be ...
- A. harmful
  - B. invasive
  - C. native
  - D. hazardous
28. The overabundance of European starlings causes problems in farmer's fields and hazards at airports. This introduced species competes with other birds, such as bluebirds, woodpeckers and flycatchers for ...
- A. insecticides
  - B. nesting sites
  - C. migration patterns
  - D. predation

#### Succession: How Ecosystems Change over Time

29. The first living species to arrive in an area are usually alga and fungus. Together their mutual relationship is visible in their form they can be observed - lichen. Lichen grows on bare rock and is considered to be the ...
- A. invasive species
  - B. primary species
  - C. pioneer species
  - D. climax species
30. When populations of many different species grow and replace one another within a particular area, a stable community of a diverse number of species that is not easily replaced by other communities will result. This is called a ...
- A. climate community
  - B. climax community
  - C. continuous community
  - D. competitive community

## Section 4 – Sustainability

## There are Intended and Unintended Consequences of Human Activities within Ecosystems

31. DDT was found to negatively affect the population of Bald Eagles. When the DDT entered the water system it was in a concentration of 0.000003 ppm. When the Bald Eagles ate fish further up in the food chain, the DDT concentration had increase to 25 ppm. The DDT concentration had increased about ...
- A. **10,000 times**
  - B. **100,000 times**
  - C. **1, 000, 000 times**
  - D. **10, 000, 000 times**
32. Extinction occurs when no individuals of a species are left ...
- A. **in a particular area**
  - B. **anywhere in the world**
  - C. **In a specific ecosystem**
  - D. **In a controlled area**
33. Because of its widespread and increased use as a medicine, Ginseng has been added to the list of living organisms that is Extinct, threatened or endangered in Canada. Ginseng is listed as ...
- A. **extinct**
  - B. **extirpated**
  - C. **endangered**
  - D. **threatened**

## Information from Scientific Investigations Can Assist Environmental Decision-Making

34. Scientist and researchers study the life cycles of insects so they can better control them ...
- A. **teach them tricks**
  - B. **without using pesticides**
  - C. **and lengthen their overall life span**
  - D. **to use as food for other research animals**
35. Recovery programs developed to help rescue populations of the Peregrine Falcon were called ...
- A. **Captive Breeding**
  - B. **Controlled Habitat**
  - C. **Tag and Monitor**
  - D. **Search and Rescue**
36. High cliffs are natural nesting spots for peregrine falcons, but when they are release close to a city, the Peregrine Falcons will build nests on...
- A. **Playground structures**
  - B. **Ledges of tall buildings**
  - C. **Elevator shafts**
  - D. **Chimneys and Smokestacks**

## There are Limitations to Scientific Knowledge

37. Ultraviolet radiation comes to us from space. The primary source of this radiation is the Sun. Luckily for living organisms on our planet, most of this deadly radiation doesn't reach us, because it is ...
- A. **absorbed by oxygen in the atmosphere**
  - B. **released as a by-product of ozone**
  - C. **bounced off our atmosphere into space**
  - D. **resistant to our atmosphere**
38. The case of the golden toad is one in which scientists and researchers have no idea about. What are they puzzled about?
- A. **The change in colour**
  - B. **The toad's resistance to disease**
  - C. **The disappearance since 1988**
  - D. **The lack of webbed feet it has developed**

39. Scientists believe they know what has happened, with certain amphibian populations, around the world. The top 4 theories include:
- A. **Global warming, thinning of the ozone, pollution, earthquakes**
  - B. **Disease, climate change, pollution, volcanic activity**
  - C. **Climate change, thinning of the ozone, pollution, disease**
  - D. **Volcanic activity, hurricanes, pollution, climate variation**

**Analyzing local problems – Reducing Ecological Footprint**

40. To determine your ecological footprint, all of the following calculations are necessary, EXCEPT for ...
- A. **energy supply needed**
  - B. **type of house you need**
  - C. **amount of water you use**
  - D. **amount of waste you produce**
41. To reduce our ecological footprint, we can ...
- A. **consume more water and less food**
  - B. **create more waste and recycle it**
  - C. **use materials that require less energy to produce**
  - D. **take longer more relaxing showers**
42. There are many waste-reducing practices, which are being suggested to lower the impact we are making in our environment. The most effective practice is ...
- A. **reusing**
  - B. **reducing**
  - C. **reclaiming**
  - D. **recycling**