



## Unit 1 - Biological Diversity

### Unit Test

### ANSWER KEY

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

Class \_\_\_\_\_

1. Monarch butterflies and Viceroy butterflies are different species. They are alike in appearance, so much so, that it is difficult to distinguish between them. The Monarch butterfly is bad-tasting. The defense mechanism illustrated by the Viceroy butterfly is ...
  - A. color
  - B. mimicry**
  - C. aggression
  - D. camouflage
2. "The deliberate change in species of animals, plants, and other organisms by breeding together only those individuals that have the desired traits." This expression answers the question ...
  - A. What is evolution?
  - B. What is natural selection?
  - C. What is artificial selection?**
  - D. What did Darwin find in his studies?
3. It was hypothesized that a plant, which grew on trees, may send roots into the tree's bark instead of into the soil to draw out water and nutrients. The tree in turn would get less water and nutrients. If this hypothesis is correct, then the relationship is described as a type of ...
  - A. commensalism
  - B. symbolism
  - C. mutualism
  - D. parasitism**
4. Darwin observed a large orchid on the island of Madagascar and predicted the existence of an organism that could feed on the nectar of this plant (located at the base, 20-30 cm from the top). The moth, which feeds on the nectar of this orchid, was discovered 40 years later. It adapted to the unusual location of nectar by ...
  - A. poking the bottom with it's proboscis
  - B. having a long proboscis**
  - C. tipping the orchid upside-down
  - D. relying on a caterpillar to puncture the nectar tube
5. The value of a cactus plant having needles on its leaves is to ...
  - A. give the plant more support
  - B. help the plant conserve water
  - C. prevent the plant from being eaten**
  - D. allow the plant to absorb more water
6. The animal that relies on camouflage for protection is the ...
  - A. moose
  - B. red fox
  - C. grizzly bear
  - D. snowshoe hare**
7. The terms Prokaryote, Protista, Fungi, Plantae, and Animalia are used to ...
  - A. name organisms
  - B. classify organisms**
  - C. disperse organisms
  - D. exterminate organisms



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8. The adaptation value of seeds that can float on water is to ...
  - A. let the seeds sprout and grow
  - B. prepare the seeds for fish food
  - C. prevent the seed from drowning
  - D. allow the seeds to be carried to a new area to grow**
  
9. A certain group of termites survived a pesticide application. Their offspring will have a resistance level to a repeated pesticide spraying that will be ...
  - A. same as the parents
  - B. lower than the parents
  - C. higher than the parents**
  - D. impossible to determine
  
10. If a scientist wanted to determine the population of clover in a square meter area, which method would be used? (Remember the Grade 8 Program!) ...
  - A. line-transect method
  - B. guess and test method
  - C. mark-recapture method
  - D. quadrant sampling method**
  
11. If the population of a particular organism is decreasing to a level where they are in immediate danger of disappearing, they are said to be ...
  - A. extinct
  - B. eliminated
  - C. endangered**
  - D. exterminated
  
12. The chances of a species becoming extinct are greatly increased if there is
  - A. little variation within that species**
  - B. a decrease in the number of predators
  - C. an abundance of food available in the area
  - D. a natural habitat which remains undisturbed by man
  
13. Diversity among living things can be defined as ...
  - A. variation among organisms**
  - B. selection of particular traits
  - C. change in stages of maturity
  - D. elimination of an organism from a local area
  
14. Desirable characteristics in each species of dog can be gradually changed by the process of ...
  - A. mimicry
  - B. cross-breeding**
  - C. cross-selecting
  - D. asexual reproduction
  
15. Kettlewell hypothesized that the change of light colored moths to dark colored moths was due to survival in an industrial environment to which they had ...
  - A. adapted**
  - B. migrated
  - C. dispersed
  - D. polymorphisized



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16. The increase in the number of 'Peppered' black moths was thought to be due to the ...  
A. need for the moths to adapt to their environment  
**B. moths getting covered by the air pollution**  
C. artificial selection by entomology scientists  
D. moths eating food that was polluted
17. The theoretical explanation of why the light-colored moths changed to dark-colored moths is ...  
A. mimicry  
B. dichotomy  
**C. natural selection**  
D. artificial selection
18. Adaptation is best defined as the ...  
A. stages of development throughout an organism's normal growth and life cycle  
B. differences and/or variations found among a group of organisms living within the same habitat  
C. arrangement of organisms in various groups or classes and identified by their structural differences  
**D. features that increase an organism's chances of surviving and reproducing in a particular environment**
19. Less or no diversity within a group of living things is usually attributed to ...  
A. extinction  
B. adaptation  
C. natural selection  
**D. asexual reproduction**
20. Polymorphism is best described as the ...  
A. steps involved in changing from a larva to an adult  
B. variation in the appearance of the sexes within a species  
**C. existence of many distinct forms within the same species**  
D. changes in appearance and habits during an organism's life cycle
21. Sexual dimorphism describes ...  
A. offspring from a single individual having the same traits  
**B. variation in the appearance of the sexes within a species**  
C. similarities in reproduction of different species of animals  
D. offspring resulting from combining reproductive cells from two individuals
22. Cacti have very thick skins which enable the cacti to survive in climates that are ...  
**A. hot and dry**  
B. hot and humid  
C. hot and moderate  
D. moderate and humid
23. A symbiotic relationship in which one species benefits and the other is neither harmed nor benefited is defined as ...  
**A. Commensalism**  
B. Parasitism  
C. Mutualism  
D. Polysymbiosis



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24. An example of mutualism is
- A. fleas feeding on a dog
  - B. barnacles riding on whales
  - C. honeybees pollinating flowers**
  - D. clown fish hiding in a sea anemone
25. Which statement describes an example of mimicry?
- A. Certain insects have large eyespots, which appear when the insect is disturbed.**
  - B. Tigers have stripes, which resemble the tall grass in which they hide.
  - C. Snowshoe hares turn white in winter to match the snow.
  - D. Young grasshoppers turn green after eating.
26. A farmer chooses to save the seeds from only the largest corn cobs from his current crop to use as seed next year. The farmer is practicing ...
- A. natural selection
  - B. artificial selection**
  - C. sexual reproduction
  - D. asexual reproduction
27. The purpose of crossbreeding is to produce offspring which ...
- A. have undesirable traits
  - B. are not changed in any way
  - C. are identical to only one parent
  - D. have the desired traits of both parents**
28. Natural selection in organisms is mainly caused by the
- A. variations and numbers of organisms
  - B. appearance of new species
  - C. scientists working with them
  - D. conditions in the environment**
29. Darwin's Theory of Natural Selection has sometimes been referred to as "survival of the fittest", which means that only the ...
- A. biggest organisms usually survive
  - B. strongest organisms usually survive
  - C. organisms with desirable characteristics survive
  - D. organisms which are best adapted to their environment survive**
30. Carl von Linne named organisms by a certain combination of classification categories. The correct order and combination which has been adopted by the scientific community is ...
- A. family, class
  - B. species, order
  - C. genus, species**
  - D. class, genus
31. The main reason scientific names are used instead of common names is because ...
- A. common names are too complicated
  - B. common names are the same worldwide
  - C. scientific names are the same worldwide**
  - D. scientific names vary from place to place



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32. Which of the following is the correct order of classification beginning with the most general to the most specific?
- A. Kingdom, family, order, phylum, class, genus, species
  - B. Kingdom, phylum, class, order, family, genus, species**
  - C. Species, phylum, order, class, family, genus, kingdom
  - D. Species, genus, family, order, class, phylum, kingdom
33. The most specific grouping within a kingdom which identifies living organisms is called ...
- A. order
  - B. phyla
  - C. genus
  - D. species**
34. A classification system is used in science to group organisms according to their ...
- A. traits
  - B. coloring
  - C. structure**
  - D. differences
35. The main reason that many organisms within the micro-environments of the rain forests will never be named or described is because organisms are being ...
- A. replaced by new species
  - B. discovered in remote areas
  - C. destroyed as the forests are depleted**
  - D. moved to different parts of the world
36. New species of animals are constantly being added to the growing number of living things. Why is this so?
- A. Organisms are constantly being reclassified.
  - B. Organisms are being found and classified by scientists.**
  - C. Organisms change and adapt, and are moved to a different grouping.
  - D. Organisms disappear from the Earth, new organisms appear to replace them.
37. Scientists exploring genetic research on many different kinds of organisms, take the eggs of females who have certain desirable traits and fertilize them with the sperm of males, from the same species. A major disadvantage that may sometimes occur is ...
- A. desirable characteristics will not always be present in the offspring
  - B. undesirable traits can also be inherited**
  - C. mutations will not occur
  - D. offspring will be sterile
38. The desert fox is especially adapted to the desert environment because they have very large ears, enabling them to ...
- A. increase the amount of body heat lost to their surroundings**
  - B. find it's prey more easily
  - C. hear impending danger
  - D. increase it's chances of finding a stream in the desert



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### NUMERICAL RESPONSE Questions

39. Sandy worked at the Enterprise Animal Research Center, where there are many scientific concepts that must be fully comprehended. She developed a system to learn these concepts by making observations for each of the concepts. These are his observations:

Observation 1	Butterflies match colors for protection.
Observation 2	Some organisms can only be found in one particular type of habitat
Observation 3	Some invertebrates have specialized structures, which help them exist in fast-flowing streams
Observation 4	Some organisms exist only because of their unique relationship with another organism

Sandy's observations match with the scientific concepts she was studying, as follows:

- 4   symbiosis
- 2   food-source dependence
- 3   environmental adaptation
- 1   mimicry

40. As a result of Natural Selection, species develop adaptations that suit their habitat. Sandy observed organisms high on the mountainside near the Center and recorded some of the adaptations she observed:

1. padded paws            2. thick fur            3. quick reflexes            4. acute hearing

Match the number of the adaptation observed by Peter with the corresponding condition within the natural habit of these organisms.

- 2   cold climate
- 1   rocky terrain
- 3   sparse vegetation
- 4   landscape enhances echoes