DATE: NAME: CLASS:

UNIT 1 ASSESSMENT

BLM 1-19

Unit 1 Test

Goal • Demonstrate your understanding of the concepts presented in Unit 1.

What to Do

Read each question carefully before answering in the space provided. If you work at a steady pace, you should have enough time to finish.

True or False

In the space provided, indicate whether each statement is true (T) or false (F).

F 1. In angiosperms, the male gametes are contained by a structure called a pistil.

T 2. Frogs use external fertilization to reproduce.

F 3. Mushrooms are fungi that reproduce by budding.

F 4. Zygospores are asexual reproductive structures produced by the mould *Rhizopus*.

T 5. The life cycle of mosses involves an alternation of sexual and asexual generations.

F 6. The ABO blood group is an example of continuous genetic variation.

F 7. Polydactyly is a recessive genetic trait.

F 8. Genetic mutations are always harmful.

F 9. Mutations in somatic cells are heritable.

F 10. Human gametes have 46 chromosomes.

Fill in the Blanks

Complete each statement with the correct term.

11. Some trees form symbiotic relationships with specialized fungi called mycorrhizae. These fungi help the tree obtain nutrients.

12. The prairie white-fringed orchid is an endangered species. It is considered a specialist, because it can only be pollinated by certain types of hawkmoths.

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ASSESSMENT

Unit 1 Test (continued)

13. Bacteria reproduce asexually by binary fission.

14. Height in humans shows continuous variation.

15. Researchers have developed genetically engineered crops that are tolerant of herbicides.

Short Answer

Answer the following questions in the space provided.

16. List three organisms (or groups) that reproduce asexually and name the method of reproduction.

plants/vegetative growth
amoeba and bacteria (binary fission)
yeast (budding)

17. (a) Define genetic mutation.

A change in the genetic information, or DNA, of an organism.

(b) List three agents that can cause genetic mutations.

X-rays, Ultra-violet rays, chemicals (cigarettes, pesticides)

18. (a) List three adaptations for life in extreme environments.

Ability to produce antifreeze like substance in blood. Ability to store more than own body weight of nutrients. Produce pigments to produce against UV radiation.

(b) What might be the advantage of having an adaptation for living in an extreme environment?

It allows the species to live where other organisms cannot, therefore eliminating the need to compete with less hardy organisms.

19. (a) Compare and contrast artificial selection and natural selection.

Artificial selection is a technique used by people to bring together desirable traits from different varieties into a single variety or breed. Natural selection is a process that occurs in nature where nature "selects" the organisms that will survive to reproduce. Both types of selection can produce great amounts of diversity.

Unit 1 Test (continued)

(b) What are the advantages and disadvantages of owning purebred dogs?

Purebred dogs have fairly consistent characteristics, so pet owners can be fairly sure of what their dog will be like based solely on the breed. However, pure breeds often have genetic conditions that can cause the dog discomfort and are expensive to treat.

(c) From what you have learned in Unit 1, what problems may arise in a small, isolated population of grizzly bears?

There is little or no chance for them to breed with grizzlies in other populations. As a result, genetic diversity in the population will remain low, which could lead to an occurrence of genetically related health problems.

Paragraph Answer

Answer the following question in paragraph form.

20. Describe some benefits of maintaining seed banks, such as the one run by the Royal Botanic Gardens in England.

Seed banks store seeds from plants that may be threatened with extinction. It is one method of preserving the genetic diversity of plants for the future. Despite habitat loss. Some seed banks cater to gardeners looking unusual or specialized plants to grow; others are used for research purposes.