

Grade 9 Unit Practice Test

Science

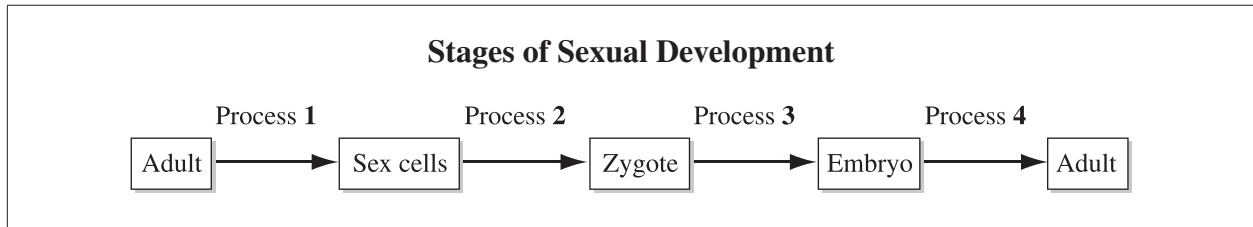
Biological Diversity

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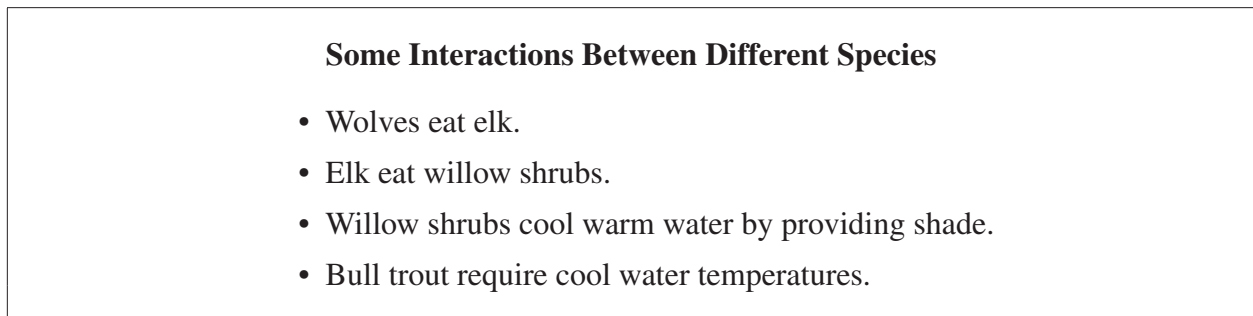
1. One advantage of asexual reproduction is that it
 - A. leads to greater variation within a species
 - B. allows offspring to adapt to environmental changes quickly
 - C. leads to long-term bonds between the offspring and the parent
 - D. allows a population to grow substantially over a short period of time

Use the following information to answer question 2.



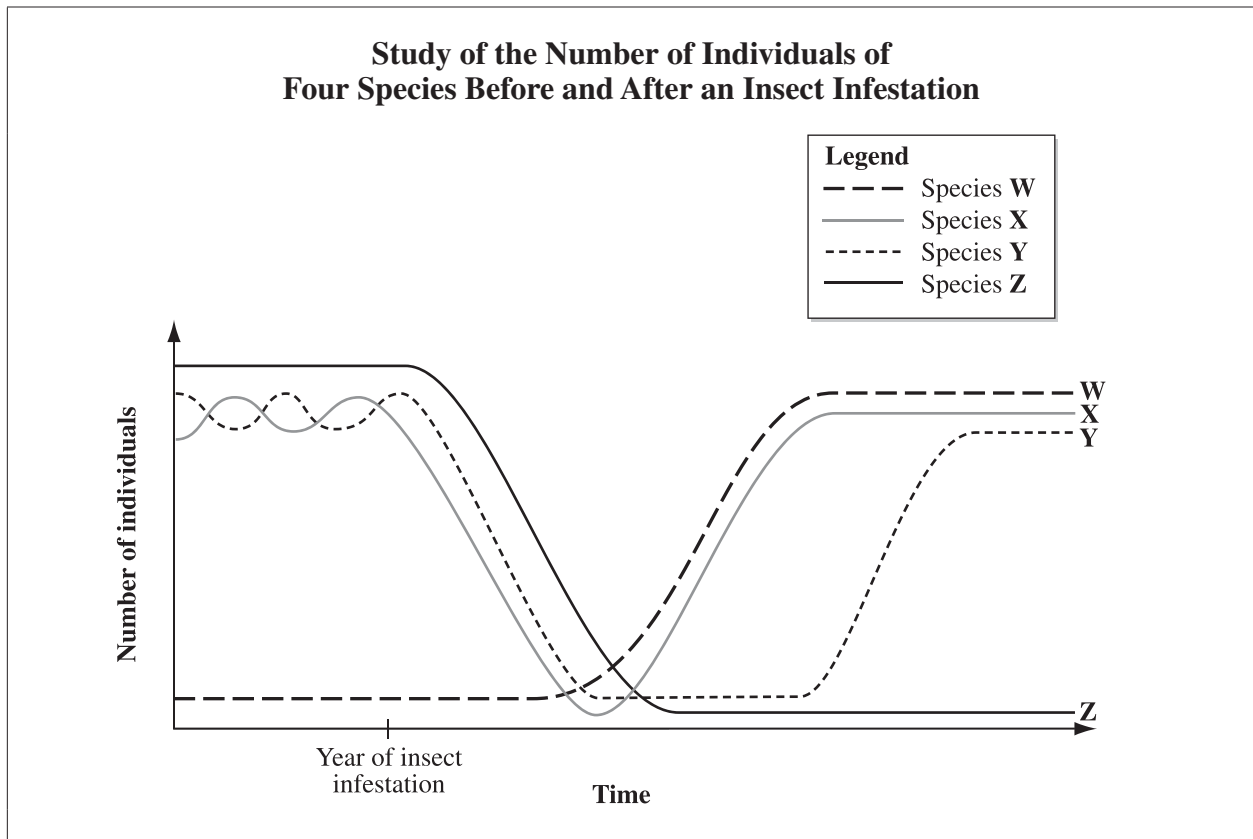
2. The stage at which fertilization takes place is labelled
 - A. Process 1
 - B. Process 2
 - C. Process 3
 - D. Process 4
-

Use the following information to answer question 3.



3. Which of the following changes is **most likely** to occur as a result of a decreased wolf population?
 - A. An increased number of predators of wolves
 - B. An increased number of willow shrubs
 - C. A decreased number of bull trout
 - D. A decreased number of elk

Use the following information to answer questions 4 and 5.



4. Given the trends on the graph shown above, the species that is the **most** genetically diverse is
- A. Species W
 - B. Species X
 - C. Species Y
 - D. Species Z
5. The responding variable in the study shown above is
- A. time
 - B. type of species
 - C. number of individuals
 - D. year of insect infestation
-
6. Which of the following human traits is not heritable?
- A. Manners
 - B. Blood type
 - C. Number of teeth
 - D. Length of forearm

Use the following information to answer question 7.



7. Which of the following countries is most biologically diverse?

- A. United States
- B. Argentina
- C. Canada
- D. Brazil

Use the following information to answer question 8.

A man and a woman who both have brown hair have three children. Two of the children have brown hair and one child has blond hair.

The gene that codes for brown hair is dominant to the gene that codes for blond hair.

8. Which of the following statements is supported by the information shown above?
- A. It is possible that neither parent has the gene that codes for blond hair.
 - B. It is necessary that both parents have the gene that codes for blond hair.
 - C. It is possible that one parent has the gene that codes for blond hair and that the other parent does not have the gene that codes for blond hair.
 - D. It is necessary that one parent has the gene that codes for blond hair and that the other parent does not have the gene that codes for blond hair.
-

9. Which structures carry information about heritable traits?
- A. Chromosomes
 - B. Carbohydrates
 - C. Proteins
 - D. Lipids

Use the following information to answer question 10.

Human cells normally have 46 chromosomes.

10. A human cell that contains 23 chromosomes is the product of
- A. mitosis
 - B. meiosis
 - C. zygote formation
 - D. embryo formation

Numerical Response

1. Use the following code to indicate the type of variation that is associated with each of the human traits listed below.

1 = Discrete variation

2 = Continuous variation

Variation: _____
Trait: **Wet or dry** **Height** **Hand size**
 earwax

(Record all **three digits** of your answer.)

Use the following information to answer question 11.

Some Causes of Species Extinction

I Disease

II Overharvesting

III Loss of habitat

IV Natural disasters

11. Which two causes of species extinction listed above are **most directly** related to human activities?
- A. I and III
B. I and IV
C. II and III
D. II and IV

Use the following information to answer question 12.

Information About Army Cutworm Larvae

- Army cutworm larvae eat the foliage of many commercial crops such as wheat and alfalfa.
- Army cutworm larvae feed from April to the end of May, at which time they develop into moths.
- A tiny wasp (*Copidosoma*) parasitizes army cutworm larvae by laying a single egg in a larva.
- Army cutworm larvae that are parasitized remain in the larval stage longer than those that are not parasitized.

12. If the population of *Copidosoma* is large, then the amount of wheat produced is expected to
- A. decrease, because larvae will feed on the crops for a longer time
 - B. decrease, because there will be fewer larvae to feed on the crops
 - C. increase, because larvae will feed on the crops for a longer time
 - D. increase, because there will be fewer larvae to feed on the crops

Use the following information to answer question 13.

A Labrador retriever has 78 chromosomes in each of its skin cells.

13. Which of the following rows identifies the type of cell division that would allow the Labrador retriever to produce other skin cells and identifies the number of chromosomes that would be expected in each cell produced?

Row	Type of Cell Division	Number of Chromosomes
A.	Meiosis	39
B.	Meiosis	78
C.	Mitosis	39
D.	Mitosis	78

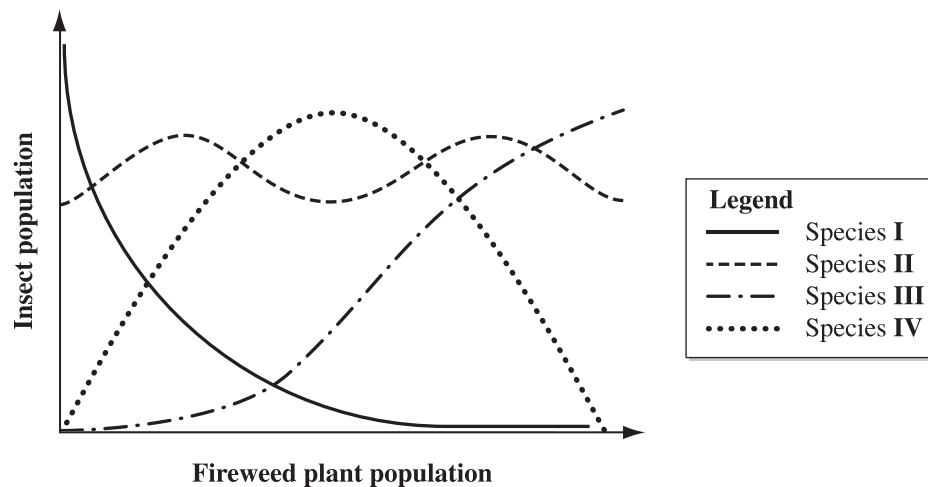
Use the following information to answer question 14.

Gregor Mendel, an Austrian monk, experimented with pea plants. He observed that when a plant that produced round seeds was mated with a plant that produced wrinkled seeds, the resulting offspring produced only round seeds.

14. The observation made by Mendel supports the inference that the wrinkled-seed trait is
- A. dominant and still part of the offspring's DNA
 - B. dominant and no longer part of the offspring's DNA
 - C. recessive and still part of the offspring's DNA
 - D. recessive and no longer part of the offspring's DNA

Use the following information to answer question 15.

Four species of insect consume nectar from fireweed plants as a component of their diet. The graph below shows the relationship between the population of each of the four insect species and the population of fireweed plants in a test area.



15. An inference that can be made from the graph above is that the insect species that is most likely to survive in changing environmental conditions is
- A. Species I
 - B. Species II
 - C. Species III
 - D. Species IV

16. Which of the following statements describes a variation within species?
- A. Unlike most other owl species, which prefer to nest in trees, burrowing owls nest underground.
 - B. A bull trout and a brook trout look similar, but a bull trout lacks black markings on its fins.
 - C. Some lodgepole pine trees grow branches near the top; some grow branches along the whole length of the tree.
 - D. Grizzly bears can be distinguished from black bears by their broad, round faces and the large humps of muscle on their shoulders.
17. Which of the following heritable human traits is **least likely** to be influenced by the environment?
- A. Weight
 - B. Hair colour
 - C. Length of foot
 - D. Earlobe attachment
18. Which of the following statements describes a trait that is **most likely** the result of artificial selection?
- A. Durum wheat, used today in pasta, was grown from seeds chosen for their high protein and gluten content.
 - B. The beak of a golden eagle is sharp and strong, which makes it useful for ripping and tearing meat.
 - C. The broad leaves on the maple tree make it efficient at gathering sunlight for photosynthesis.
 - D. Wolves have large ridges of bone on the back of their skulls that allow the anchoring of strong jaw muscles.

Use the following information to answer numerical-response question 2.

Newspaper Headlines

- 1 “Animal Trafficking—Can It Be Stopped?”
- 2 “Banff National Park Celebrates Anniversary”
- 3 “Baby Elephant Born at City Zoo”
- 4 “Disease Destroys Rare Plant Species”

Numerical Response

2. Match each of the newspaper headlines numbered above with the conservation strategy to which it **best** relates.

Captive breeding programs _____ (Record in the **first** column)

Establishment of seed banks _____ (Record in the **second** column)

Designation of protected areas _____ (Record in the **third** column)

Development of international treaties _____ (Record in the **fourth** column)

(Record your answer.)

Science 9 – Practice Test 2019 Biodiversity Key

Question # in Document	Key
1	D
2	B
3	C
4	B
5	C
6	A
7	D
8	B
9	A
10	B
NR1	122
11	C
12	A
13	D
14	C
15	B
16	C
17	D
18	A
NR2	3421