

Brett Robbins Academic Consulting

Biology 30 Practice Test

Unit D: Population & Community Dynamics

10 Questions

Original practice questions written to the Alberta curriculum, in the style of past diploma examinations. Work through each question, then check your answers with the key at the end.

This practice test was made by AI and there may be mistakes. If a question or answer looks wrong, contact Brett for clarification.

Question 1

Which of the following is a density – dependent factor that could limit the growth of a population of nesting birds?

- A) A flood that destroys nests along a riverbank
- B) A drought that reduces the growth of seed – producing plants
- C) Competition for nesting sites that increases as the population grows
- D) A late frost that kills insects eaten by the birds

Question 2

A small population of rabbits is introduced to an island where food is abundant and there are no predators. At first, the population grows rapidly and the growth curve does not level off. The growth pattern and the shape of the growth curve are, respectively,

- A) logistic and S – shaped
- B) exponential and J – shaped
- C) logistic and J – shaped
- D) exponential and S – shaped

Question 3

After a glacier retreats, lichens are the first organisms to grow on the newly exposed rock. In ecological succession, the lichens are described as

- | | |
|--------------------|---------------------|
| A) pioneer species | B) climax species |
| C) seral species | D) keystone species |

Question 4

In a population that is in Hardy – Weinberg equilibrium, the frequency of the dominant allele is 0.7. The frequency of the homozygous dominant genotype is

- A) 0.09
- B) 0.42
- C) 0.70
- D) 0.49

Question 5

A clownfish lives among the stinging tentacles of a sea anemone. The clownfish is protected from predators, and the anemone receives nutrients from waste produced by the clownfish. This relationship is an example of

- A) mutualism
- B) parasitism
- C) commensalism
- D) competition

Question 6

In one year, a population of 2000 deer had 300 births, 150 deaths, 50 immigrants, and 100 emigrants. The per capita growth rate of the deer population for that year was

- A) 0.025
- B) 0.075
- C) 0.05
- D) 0.10

Question 7

A population of yeast cells growing in a flask with a limited supply of nutrients follows a logistic growth pattern. The population increases by the greatest number of individuals per hour when the population size is

- A) equal to the carrying capacity of the flask
- B) approximately one – half of the carrying capacity of the flask
- C) greater than the carrying capacity of the flask
- D) at its smallest, immediately after the yeast is added

Question 8

Which of the following sets of characteristics best describes an r – selected species?

- A) long lifespan, few offspring, and extensive parental care
- B) late sexual maturity and a low reproductive rate
- C) large body size and a population maintained near carrying capacity
- D) short lifespan, many offspring, and little or no parental care

Question 9

Two populations of the same wildflower species grow on opposite banks of a river. Bees carry pollen between the two populations. Over time, this movement of pollen will most likely

- A) increase gene flow and decrease the genetic differences between the populations
- B) cause a founder effect in both populations
- C) cause a population bottleneck in both populations
- D) increase genetic drift and increase the genetic differences between the populations

Question 10

A wildfire burns a mature spruce forest, but the soil remains intact.

Grasses, shrubs, and eventually spruce trees regrow in the area.

This regrowth is an example of

- | | |
|-------------------------|--------------------------|
| A) primary succession | B) a climax community |
| C) secondary succession | D) competitive exclusion |

Answer Key

- | | | |
|------|------|-------|
| 1. C | 5. A | 9. A |
| 2. B | 6. C | 10. C |
| 3. A | 7. B | |
| 4. D | 8. D | |

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