BIOLOGY · ALASKA

# Biology
## Practice Test

### Unit 4: Ecology and Ecosystems

25 Questions

Original practice test based on the Alaska curriculum. Work through each question, then check your answers at the end.

This practice test was made by AI and there may be mistakes. If a question or answer looks wrong, use the Flag a mistake button to let Brett know so he can fix it.

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Question 1

An ecosystem includes all of the

A) Living factors only

B) Nonliving factors only

C) Living and nonliving factors in an area

D) Producers only

Understand It with Pulse Flag a mistake



Question 2

Which of these is an abiotic factor in a forest

A) Trees

B) Wolves

C) Fungi

D) Temperature

Understand It with Pulse Flag a mistake

Question 3

A habitat is best defined as the place where an organism

A) Hunts

B) Lives

C) Migrates from

D) Is born only

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Question 4

A niche describes an organism

A) Role in its ecosystem

B) Address

C) Size

D) Color

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Question 5

In a food chain the organisms that make their own food from sunlight are

A) Herbivores

B) Carnivores

C) Producers

D) Decomposers

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Question 6

Decomposers such as fungi and bacteria are important because they

A) Eat only living plants

B) Return nutrients to the soil

C) Produce sunlight

D) Stop all decay

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Question 7

In most food chains only about 10 percent of energy is transferred from one trophic level to the next The rest is mainly

A) Stored as fat forever

B) Turned into sunlight

C) Sent to space

D) Lost as heat

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Question 8

A food web is more realistic than a single food chain because it shows

A) One feeding path only

B) Only producers

C) Many feeding relationships

D) Only top predators

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Question 9

Grass is eaten by a hare which is eaten by a lynx In this chain the hare is a

A) Producer

B) Decomposer

C) Primary consumer

D) Secondary consumer

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Question 10

In the carbon cycle plants remove carbon dioxide from the air by

A) Respiration

B) Photosynthesis

C) Decomposition

D) Combustion

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Question 11

In the nitrogen cycle bacteria in soil and in root nodules convert nitrogen gas into forms plants can use This process is called

A) Nitrogen fixation

B) Denitrification

C) Photosynthesis

D) Transpiration

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Question 12

Carrying capacity is the largest population an environment can support

A) For one day

B) Without any food

C) In a laboratory only

D) Over a long time

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Question 13

A population grows slowly at first then fast then levels off near carrying capacity This growth pattern is

A) Exponential

B) Logistic

C) Linear

D) Random

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Question 14

Which factor is density dependent because its effect grows as population density rises

A) Disease

B) Drought

C) Flood

D) Wildfire

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Question 15

Two species of warblers feed in different parts of the same trees This reduces

A) Predation

B) Competition

C) Mutualism

D) Succession

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Question 16

A bee pollinates a flower while collecting nectar Both species benefit This relationship is

A) Parasitism

B) Commensalism

C) Mutualism

D) Competition

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Question 17

A tick feeds on a moose and harms it while the tick benefits This relationship is

A) Mutualism

B) Commensalism

C) Competition

D) Parasitism

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Question 18

Primary succession begins on bare rock with the arrival of

A) Large trees

B) Pioneer species such as lichens

C) Top predators

D) Deep soil

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Question 19

After a forest fire in Alaska new plants grow in soil that is already present This is an example of

A) Primary succession

B) Extinction

C) Secondary succession

D) Speciation

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Question 20

The tundra biome is characterized by

A) Hot dry summers and cacti

B) Year round warm rain

C) Dense broadleaf forest

D) Cold temperatures permafrost and few trees

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Question 21

Salmon that die after spawning in Alaska streams add nutrients from the ocean to the forest This best illustrates

A) Nutrient cycling between ecosystems

B) Energy loss only

C) Primary succession

D) Genetic drift

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Question 22

Hare and lynx numbers in northern Canada were recorded over many years When hare numbers rose lynx numbers rose a short time later When hare numbers fell lynx numbers fell a short time later What relationship best explains this pattern

A) Predator and prey

B) Mutualism

C) Competition

D) Commensalism

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Question 23

Excess fertilizer washes into a lake. Algae grow rapidly, then die, and their decay uses up oxygen. Fish are most likely to

A) Increase rapidly

B) Be unaffected

C) Die from low oxygen

D) Move to land

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Question 24

An invasive species often harms native species mainly because it

A) Has few natural predators in the new area

B) Cannot reproduce

C) Needs no food

D) Always dies quickly

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Question 25

Researchers marked 40 fish in a lake and released them Later they caught 50 fish and found 10 of them were marked Estimate the total fish population

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# ANSWER KEY

1. C
2. D
3. B
4. A
5. C
6. B
7. D
8. C
9. C
10. B
11. A
12. D
13. B
14. A
15. B
16. C
17. D
18. B
19. C
20. D
21. A
22. A
23. C
24. A
25. 200

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