STAR Test Sample Questions

Grade 10: Life Science

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Standardized Testing and Reporting - STAR

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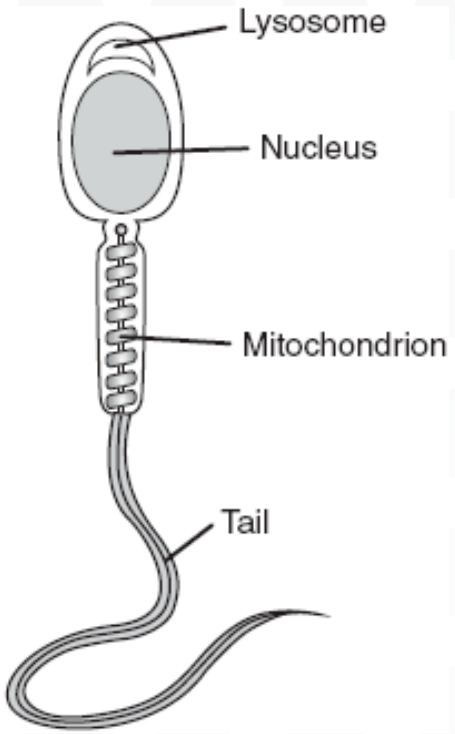
Cell Biology (Performance Level: Below Basic) – Question 01

The diagram below shows a male gamete.



Which structure stores most of the genetic information?

A mitochondrion
B lysosome
C nucleus
D tail

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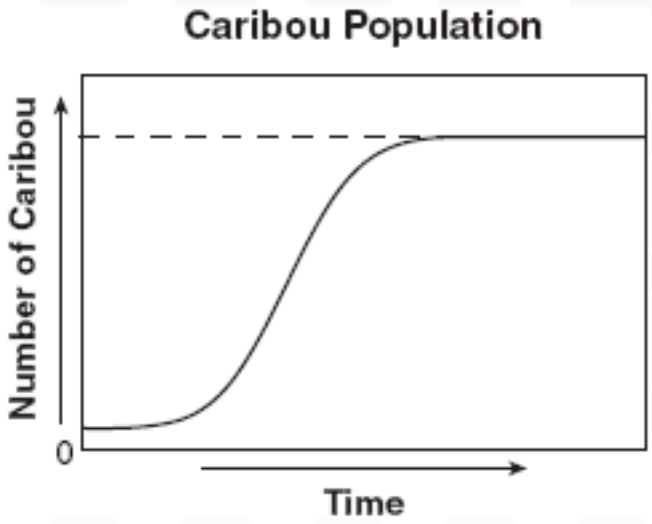
Ecology (Performance Level: Proficient) – Question 01

The graph below shows changes in a caribou population over time.



Based on the graph, which of the following is a possible explanation for the stabilization of the caribou population?

A an equal number of deaths and births
B an unequal number of deaths and births
C an equal number of immigrants and births
D an unequal number of immigrants and deaths

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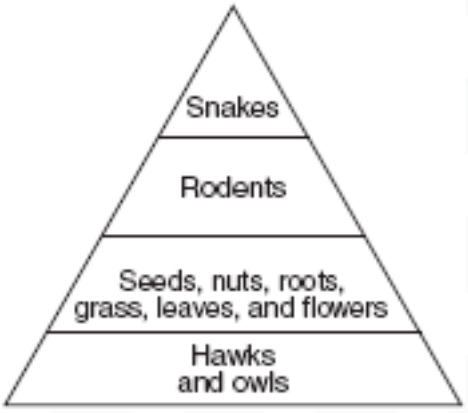
Ecology (Performance Level: Basic) – Question 01

The table below contains information about animal diets.

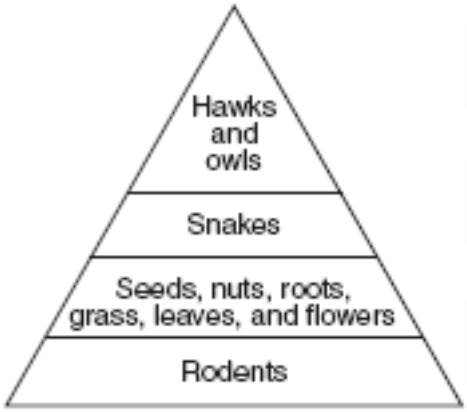
Animals	Diet
Snakes	Squirrels, chipmunks, gophers, and mice
Hawks and owls	Rodents and reptiles
Rodents	Seeds, nuts, roots, grass, leaves, and flowers

Which energy pyramid *best* represents the data in the table?

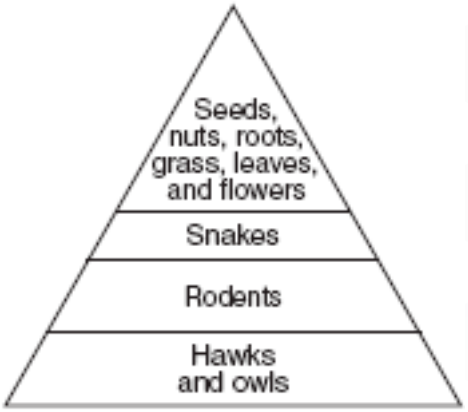
A



C



B



D

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Evolution (Performance Level: Advanced) – Question 01

A particular allele in mice is lethal in homozygotes. Heterozygotes, however, develop normally. Why does this allele remain in the population?

A Homozygous mice pass the allele to their offspring.
B The recessive allele is masked in heterozygotes.
C Natural selection selects for the homozygous individual with normal alleles.
D Natural selection selects against the heterozygous individual.

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Evolution (Performance Level: Proficient) – Question 01

How is natural selection in the evolution of long necks in giraffes *best* explained?

A Shorter-necked giraffes were killed by long-necked giraffes.

B Giraffe necks grew longer because of the bone structure of the animals.

C Giraffes with longer necks survived because they were better suited to the environment.

D Long-necked giraffes mated only with other long-necked giraffes.

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Evolution (Performance Level: Proficient) – Question 02

Skeletal structures are common between two animals of different species. These structures probably exist because both species

A have a common food source.
B live in the same environment.
C have survived until the present time.
D are related to a common ancestor.

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Genetics (Performance Level: Advanced) – Question 01

Which of the following cell types is formed by meiosis?

A muscle cells
B sperm cells
C skin cells
D blood cells

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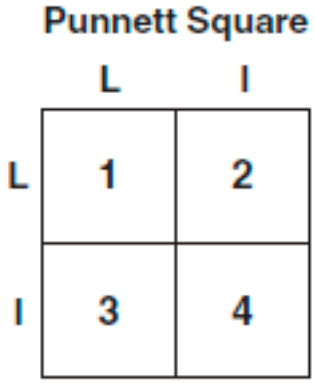
Genetics (Performance Level: Proficient) – Question 01

In humans, the allele for unattached earlobes (L) is dominant to the allele for attached earlobes (l).



Based on the diagram above, an offspring with attached earlobes is indicated in

A box 1.
B box 4.
C boxes 2 and 3.
D boxes 1, 2, and 3.

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Investigation and Experimentation (Performance Level: Proficient) – Question 01

A mineral supplement designed to prevent the common cold was given to two groups of people during a scientific study.

	Dosage
Group 1	$50 \frac{mg}{day}$
Group 2	$100 \frac{mg}{day}$

After eight weeks, neither group reported a case of the common cold. Which of the following would have made the outcome of this study more valid?

A Test only one group with 150 mg of the supplement.
B Give the supplement to both groups for only 6 weeks.
C Create a third group that receives 75 mg of the supplement.
D Create a third group that does not receive the supplement.

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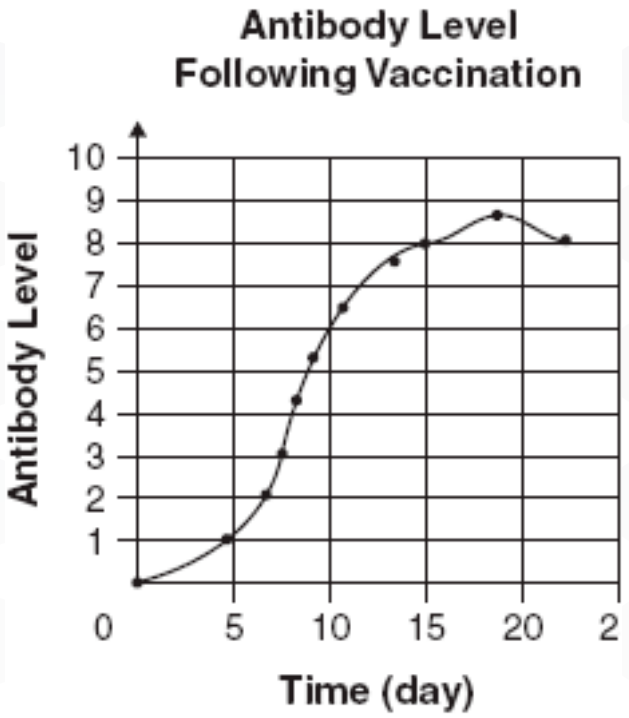
Investigation and Experimentation (Performance Level: Basic) – Question 01

The graph below shows the production of antibodies following a flu shot.



Which of the following statements *best* describes the maximum antibody level of a person's body after a flu vaccination?

A It occurs immediately.
B It is never achieved.
C It is achieved on day 15.
D It is achieved on day 18.

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Physiology (Performance Level: Advanced) – Question 01

The purpose for giving a person a vaccine is to

A introduce chemicals that destroy viruses.
B stimulate an immune response.
C prevent inflammation.
D cure a disease.

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Physiology (Performance Level: Basic) – Question 01

Which of the following pairs provides structural support for a human?

A skin and blood
B bones and muscles
C spine and heart
D brain and nerves