Review Pak #5

Can We All Stay At Your Place?

Part A – Multiple Choice Questions

1. Which of the following trophic levels would a herbivore occupy?

   (A) producer
   (B) primary consumer
   (C) secondary consumer
   (D) decomposer

2. Organisms that make their own energy are called

   (A) autotrophs.
   (B) autobots.
   (C) heterotrophs.
   (D) scavengers.

3. Consumers must consume other organisms to get the energy that they need to survive. They are also called

   (A) autotrophs.
   (B) autobots.
   (C) heterotrophs.
   (D) decoposers.

4. Primary consumers are first level consumers that eat producers. They are

   (A) carnivoires
   (B) omnivoires
   (C) herbivoires
   (D) apex preditors

5. What percentage of energy is passed on to the next trophic level?

   (A) 10%
   (B) 30%
   (C) 50%
   (D) 90%

6. Plants convert carbon dioxide and water into carbohydrates and oxygen. This process is called

   (A) fermentation.
   (B) photosynthesis.
   (C) respiration.
   (D) combustion.

7. In the carbon cycle, animals return carbon to the atmosphere by

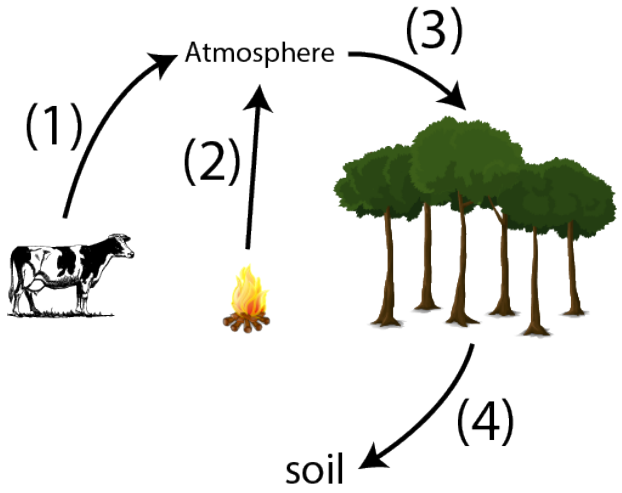
   (A) consumption.
   (B) photosynthesis.
   (C) cellular respiration.
   (D) combustion.

8. During the combustion process

   (A) carbon enters the soil as dead plant matter.
   (B) plants are eaten by a consumer.
   (C) carbon dioxide and water are converted into carbohydrates and oxygen.
   (D) carbon dioxide is released into the atmosphere.

Questions 9 and 10 refer to the following information.

The following simplified diagram represents various processes and reservoirs in the carbon cycle.



9. Which of the following is correct?

	(1)	(2)	(3)
(A)	Consumption	Combustion	Photosynthesis
(B)	Cellular Respiration	Decomposition	Photosynthesis
(C)	Consumption	Combustion	Cellular Respiration
(D)	Cellular Respiration	Combustion	Photosynthesis

10. Which process is labelled (4)?

(A) combustion
(B) decomposition
(C) diffusion
(D) cellular respiration

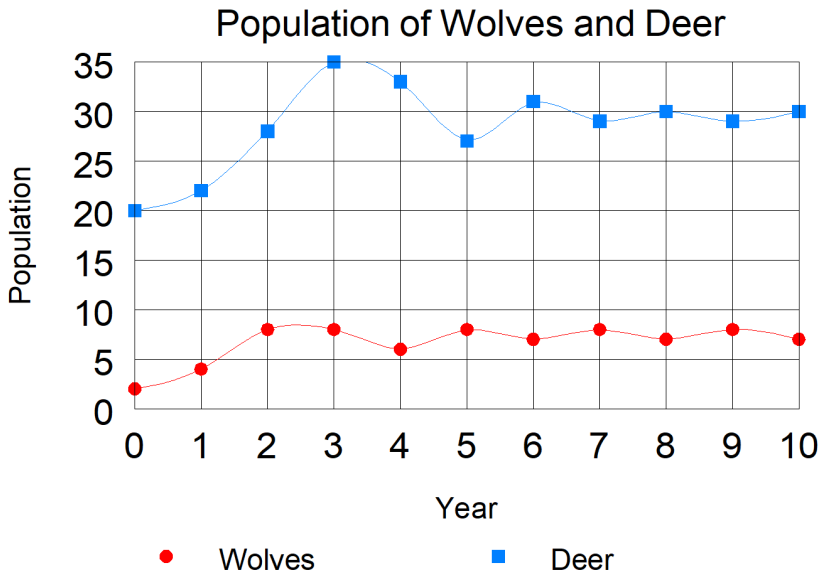
11. Nitrogen fixation is a process that converts

(A) nitrogen from the water into a gas.
(B) ammonium into nitrates.
(C) atmospheric nitrogen into ammonium.
(D) nitrates into atmospheric nitrogen gas.

12. The maximum population size that an environment can support is called the

(A) population limit.
(B) carrying capacity.
(C) sustainable development.
(D) biodiversity level.

13. The following graph shows the population of wolves and deer over a 10-year period.



The best estimate for the carrying capacity of deer is

(A) 35
(B) 30
(C) 26
(D) 20

14. In a predator-prey relationship between foxes and rabbits, if the number of foxes increases, then the number of rabbits will most likely

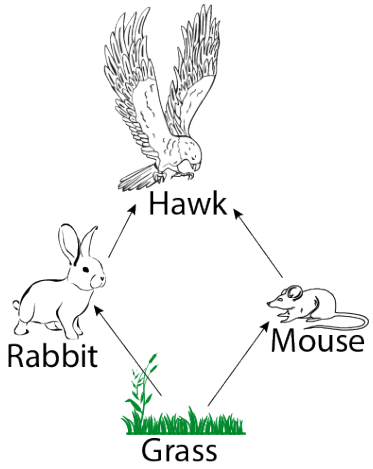
    (A) increase due to decreased predation.

    (B) decrease due to increased predation.

    (C) decrease due to increased competition for grass.

    (D) increase due to more available shelter.

15. The following diagram is a simplified food web for an ecosystem



What might happen to the hawk population if the mice were to suddenly disappear from the ecosystem.

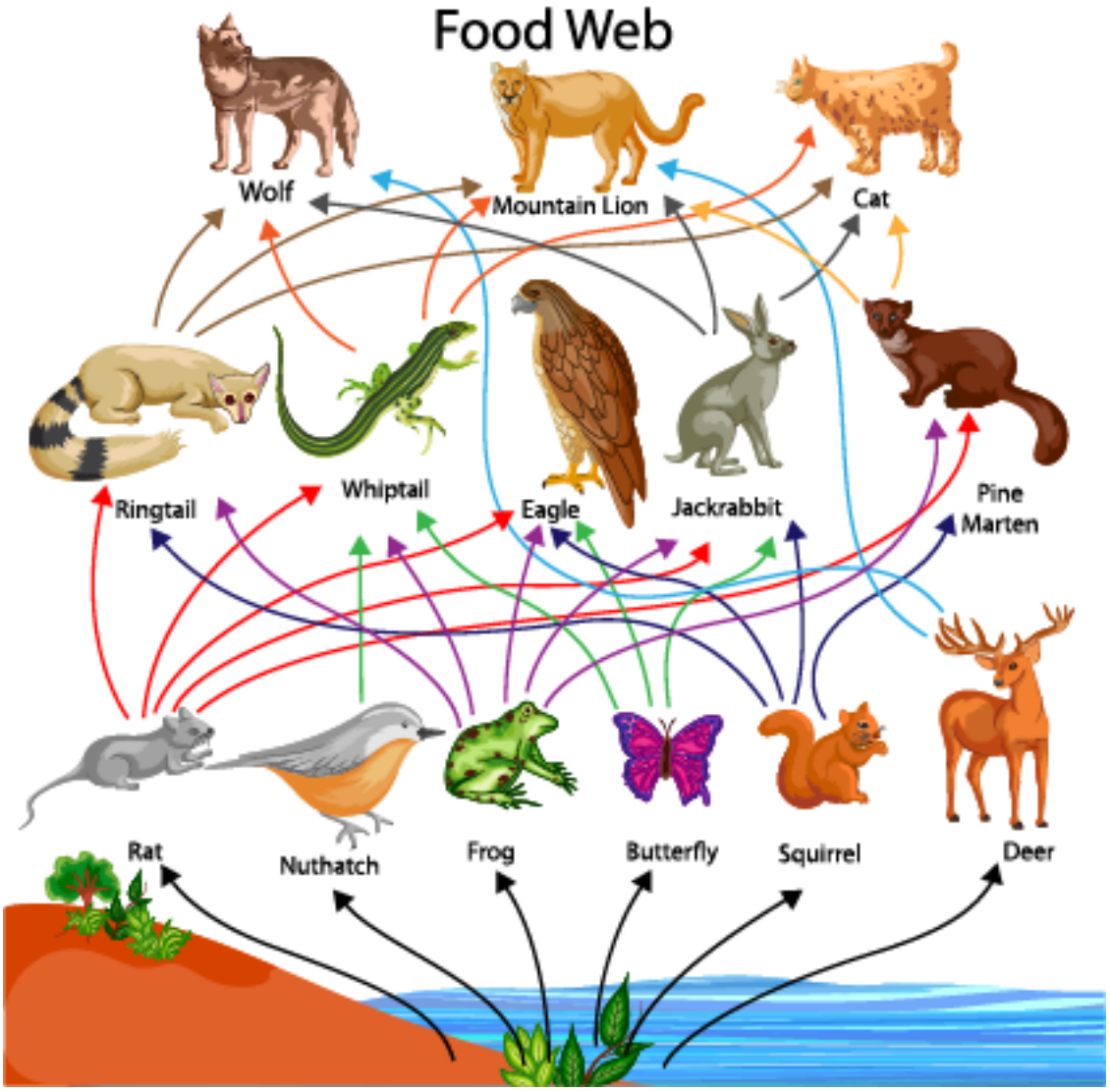
(A) The hawk population would increase due to less available food.

(B) The hawk population would decrease due to less available food.

(C) The hawk population would not change due to less available food.

Part B – Free Response Questions

1. An ecosystem contains only the animals shown in the following foodweb.

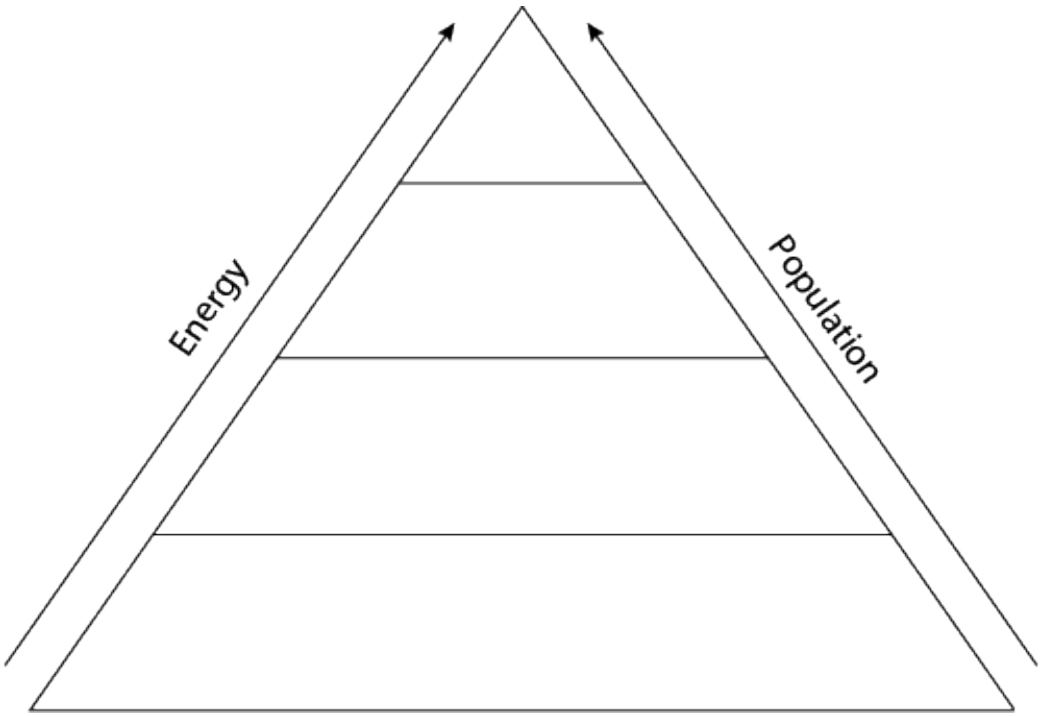


Credit: vecton (Adobe Stock)

(a) Label the primary, secondary, and tertiary consumers.

(b) The producers are not labelled on the diagram. Provide an example of a possible producer for this ecosystem.

(c) Complete the following energy pyramid using the organisms from the food web.



(d) If the producers store 1 000 000 J of energy, how much energy would be stored by the tertiary consumers?

(e) Briefly explain what could happen to the eagles and the rats if all the trees in the ecosystem were cut down.

2. While elephants are primary consumers, their carrying capacity is much lower than for other primary consumers. Explain why this might be.

3. What effect could a natural disaster like a fire have on the carrying capacity of an ecosystem?