Review Pak #5

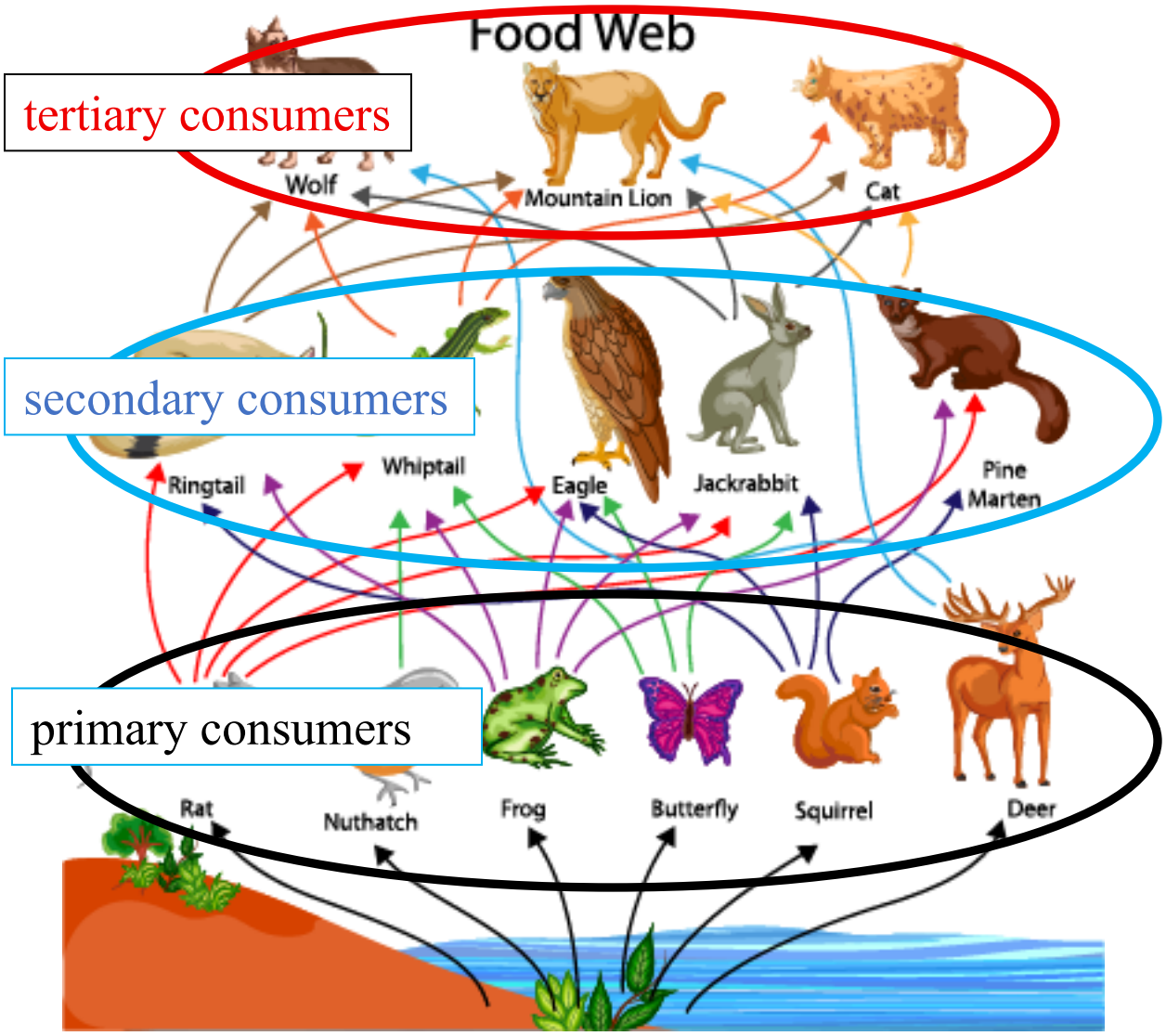
Can We All Stay At Your Place?

Part A – Multiple Choice Questions

1. B
2. A
3. C
4. C
5. A
6. B
7. C
8. D
9. D
10. B
11. C
12. B
13. B
14. B
15. B

Part B – Free Response Questions

1. An ecosystem contains only the animals shown in the following food web.



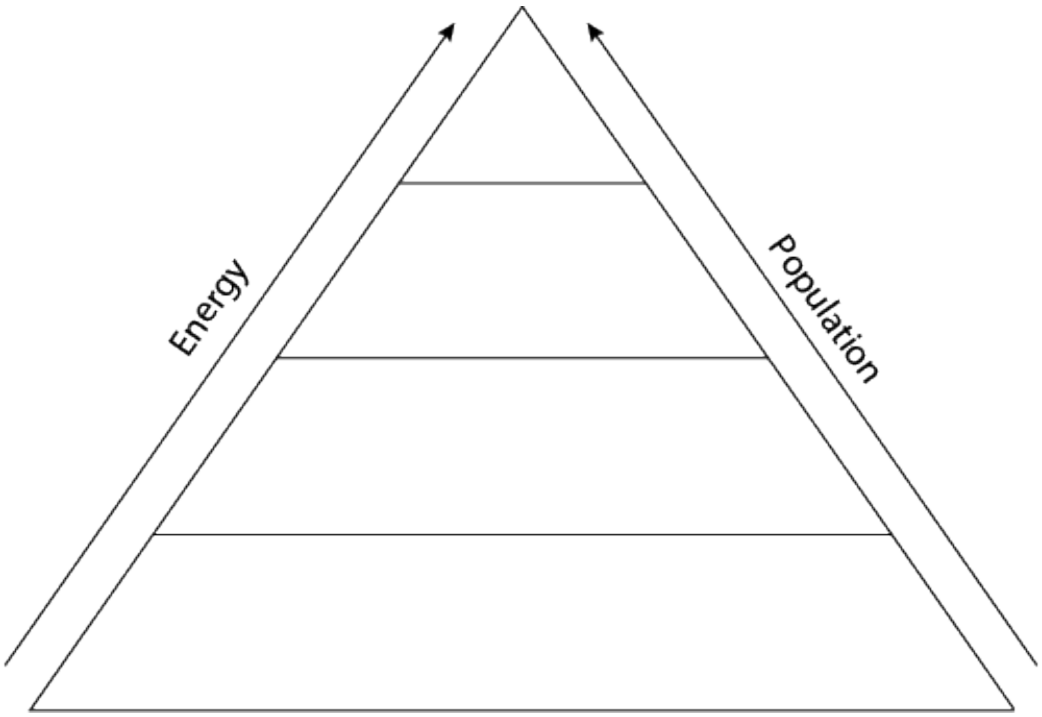
Credit: vecton (Adobe Stock)

(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.

any type of ground plant
for example: grass

(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?

1000 J

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

sample response:

The population of eagles would likely decrease as there would be fewer places for the eagles to build nests and perch. This may result in an increase in the population of rats since fewer eagles will be feeding on them.

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

sample response:

An elephant is large compared to other primary consumers. Therefore, it requires more food and space than other primary consumers. Food and space are limited, so fewer elephants could be supported by the ecosystem than other primary consumers.

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

sample response

The fire will decrease the amount of trees, grass, and other vegetation in the ecosystem. This will reduce the amount of food available for primary consumers, causing their population to decrease. The decrease in primary consumers will decrease the number of secondary consumers that rely on the primary consumers for food. There will also be less shelter available for animals that live in trees. Decomposers will increase in population due to the increase in dead organic material.

The carrying capacity for many consumers will decrease to zero or almost zero. The carrying capacity for producers will increase as there is very little competition for resources. The carrying capacity for decomposers will increase.