Biological Diversity /32

Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

# Final Assignment:

**Read all parts of your assignment carefully and record your answers in the appropriate places.**

Use the following information and graphics to answer questions 1 to 4. Use your imagination. Imagine that thousands of years ago a tectonic plate movement carried a large chunk of land several kilometres away from a mainland. It was located in an area that had a very stable or unchanging climate.

A large group of rabbits were the only mammals carried along on the new island. A zoologist recently did a study of the rabbits on this remote island. She made a photographic record of several typical descendants of the original group. Carefully study this group; then answer the following questions using the scientific concepts and terms learned in this module.





1. You can infer what purpose is served by adaptations.
	1. List two different, specific behavioural adaptations found in these rabbits. Make an inference about their functions.
	2. List two different, specific structural adaptations found in these rabbits. Make an inference about their functions.
2. The rabbit in C has received a nasty cut and is quite upset about it – ouch!
	1. To repair the cut, the rabbits body will go through cell division. Cell division is a/an sexual/asexual process (circle one)
	2. Name the process by which genetic material will be copied during the repair.
3. The descendants of the original group of rabbits have come to use four different food sources—insects, fruits, fish, and plant fiber. Four groups use only one specific source, while a fifth group uses three of the four sources.
	1. Name and explain the process that caused this division into new species based on food sources.
	2. Classify the type of niches that the specialist rabbits occupy and the niches that the generalist rabbits occupy.
4. Complete the following statements. Use scientific terms to make meaningful statements based on the story of the island rabbits.
	1. Over the years, the rabbits split into distinct groups. In other words, they developed greater \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ through the process of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ .
	2. Fossil records showed that the original group of rabbits had short ears. Having very long mobile ears is a trait that did not exist in the original group of rabbits. The gene(s) for ear length must have \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ early in the rabbits’ island history.
	3. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ for limited resources is the likely cause for the formation of distinct groups among the rabbits.
	4. One of the swimming rabbit group’s favourite foods is the “squishy-sphere” organism that lives in the water around the island. These spheres are formed from clumps of genetically identical single-celled organisms, which undergo \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ reproduction. The original parent cell simply duplicates its genetic contents. The parent cell then splits into two daughter cells. During the process, the genetic content is copied in a process known as \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ . Occasionally, they follow a primitive form of sexual
	reproduction. This type of sexual reproduction is called \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
	5. A chemical plant blew up hundreds of kilometres away from the island. The air and water became somewhat polluted. The population of the swimming rabbit group quickly dropped as a result, and many of their offspring died at a very young age. Their health and population gradually increased as the pollutant was removed from their habitat. This group could be considered a(n) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ , because its presence indicates environmental change.
	6. The number of whiskers, the length of feet, and the tendency to swing from trees are likely \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ traits.
	7. One species of rabbit has been forced out of a large section of the island. In other words, the rabbits have been \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ from that area. Another rabbit species was out-competed and no longer exists. It is now \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ .
5. Complete the following questions.



* 1. Name three new types of biotechnologies.
	2. Use the following photographs to answer the questions. The photo on the left is of grizzly bears, while polar bears are in the photo on the right. There is variation within a species and among species. The coat colour of the grizzly bears provides an example of variation \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ a species. Together, the two photographs show there is greater variation \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ species than \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ a species.
	3. The Yellowstone to Yukon Conservation Initiative (Y2Y) is a group of more than 250 Canadian and United States organizations. They are working together to create an uninterrupted corridor for animal movement along the Rocky Mountains. This strip of land would become a(n)\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ in which human activities would be restricted by law. Two other ways people can preserve biodiversity are by the use of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
	4. A single yeast cell can reproduce by growing young from its surface. This way of producing offspring is called \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ .
	5. On very rare occasions, an unfertilized mammal egg divides into two through a process like mitosis. Then the two daughter cells rejoin and grow into a normal fetus. How would the genetic makeup of the resulting baby compare to its mother?