Science 9: Biological Diversity Final Exam Review

1. What are the main components of biological diversity?

2. Explain the difference between structural and behavioural adaptations with examples of each.

3. What is the value of variation?

4. Describe how biological diversity is measure within a specific area.

5. Explain what is included in an organism's niche.

6. Why is there little diversity and large populations in Northern Canada and high diversity with small populations in Central and South America?

7. Give an example of each type of symbiotic relationship.
Commensalism

Mutualism

Parasitism

Interspecies competition

8. Briefly describe the different reproductive processes that can occur asexually.
Binary Fission

Asexual Spore Production

Cuttings

Budding

9. Explain the process of sexual reproduction in animals.

10. Explain the process of conjugation in bacteria.

11. Explain the difference between the two different kinds of inherited variation.

12. Give two examples of dominant traits and two examples of recessive traits.

13. Explain what mutations are and what can cause them.

14. Outline how DNA was discovered.

15. Illustrate the chemical structure of DNA that was modeled by Watson and Crick.

16. What enables DNA to have so many variations with only 4 chemicals.

17. Explain the detailed process this illustration demonstrates.

18. Some organisms can reproduce sexually and asexually. Explain the advantages and disadvantages of each process.

19. Describe some positive and negative consequences of biotechnology.

20. A homozygous dominant male with brown eyes and a heterozygous female with brown eyes reproduce. Show a Punett square that outlines the possibilities of eye colours in their offspring.

21. What are the drawbacks of artificial selection?

22. Darwin explained his theory of natural selection, which could be summed up in four statements:

23. Explain what occurs during the process of each type of artificial selection technique below.
Cloning

Artificial insemination

In vitro fertilization

Genetic engineering

24. Explain the difference between extinction and extirpation.

25. What human activities can have an impact on species populations?

26. How do zoos preserve biodiversity?

27. What are some organizations doing to preserve plant species and avoid species extinction?

28. What strategies are used to preserve biological diversity in Canada?