G11 Biology: Class 7 Homework

1. Explain why harmful mutations do not accumulate over time and cause harm to populations. **[3 marks]**

2. Use the evolution of antibiotic resistance to show how a mutation that is advantageous for one species can be harmful for another. **[3 marks]**

3. How do the genetic diversity of a population and mutation rates limit the ability of breeders to create organisms with desired traits? **[3 marks]**

4. a) Based on Lamarck's theory of evolution, what could you do to ensure your children were born with increased body flexibility? **[2 marks]**

   b) Based on Darwin's theory of evolution, what could you do to ensure your children were born with increased body flexibility? **[2 marks]**

5. Imagine you were asked to excavate fossils from deposits near the top of the Grand Canyon and near the bottom. Predict any pattern you would expect to find in the fossils. **[2 marks]**

6. Which of the following would you expect to find on a remote island. Explain your reasoning. **[8 marks]**

   a) A variety of hummingbirds OR a variety of larger seed-eating birds

   b) Large lizards OR large mammals

   c) Some species that are genetically similar OR most species that are genetically very distinct

   d) Species found nowhere else on Earth OR species that are also found on other remote islands.

7. The coqui frog was accidentally introduced to Hawaii in 1988. The population has risen dramatically, and the frogs now pose a threat to native species. If these frogs are so successful, why are there no native frogs species on these large islands? **[2 marks]**

8. Which of the following pairs represent homologous features and which represent analogous features? Explain your answers. **[10 marks]**

   a) The claw of a lobster and the hand of an ape

   b) The wing of a bat and the wing of a bird

   c) The eyes of a fly and the eyes of a hawk

   d) The tusks of an elephant and the teeth of a mouse

   e) The webbed feet of an otter and the fins of a fish

9. Explain how the bones within dolphin flippers, arranged in a pattern of five toes, provide evidence of evolutionary change. **[3 marks]**

10. Describe the evidence of evolution revealed by the embryonic development of different species. **[3 marks]**

11. Define "Natural Selection" **[1 mark]**

11. A male walrus lives to be 20 years old and mates with 18 females during its life. A second male lives to be 10 years old but mates with 44 females. Which ale has natural selection "favoured"? Explain your reasoning. **[3 marks]**

12. Outline the hypothetical steps that might take place as a species of bird evolves a smaller bill after reaching a remote island. **[4 marks]**

13. How did the absence of falsifying evidence increase Darwin's confidence in his theory? **[2 marks]**

14. What is a vestigial feature? Describe a vestigial feature on humans and describe what it could have been used for in our past ancestors. **[3 marks]**

15. Some animals produce only a few young at a time, while other produce hundreds, if not thousands of eggs at a time. What do you see as the advantage of each approach? **[2 marks]**