**GRADE 11: EVOLUTION ASSIGNMENT**

**October 6, 2022**

Duration: 1-1.5h as needed

WORTH: 4% of final grade

**Instructions: Read the following questions carefully and provide well supported answers. If you use outside sources to answer some of the questions, be sure to CITE as to avoid plagiarism!**

GOOD LUCK! 😊

|  |  |
| --- | --- |
| TOTAL: | /42 |

QUESTIONS:

**Part A- Theory**

1. Humans differ from monkeys by their absence of a visible tail.  Humans differ from gorillas by the lack of function of their appendix.  Why do you think humans lost their tail but did not lose their appendix? \*Use proper terminology learnt in class. **(5 marks)**
2. According to the many types of fossils we have learnt in class, name two that would be best for extracting tissue samples. Provide a descriptive definition for each type. **(4 marks)**
3. Compare the findings of Darwin and Wallace. Which ideas did they share and how did they come to their conclusions? Provide specific examples of their research that led to their theories. **(5 marks)**
4. A paleontologist in Asia comes across an unknown fossil of a land animal. They take to the internet to find out more information about it and discover that similar fossils have been found in Africa. How is this possible? AKA how do you explain finding similar fossils in both Asia and Africa? Explain using proper terminology. **(5 marks)**
5. A donkey and a horse are able to breed and produce strong viable offspring. This hybrid animal is called a mule and is great for farm work. Although it is healthy, the mule offspring is sterile and cannot reproduce.
6. Is the mule a different species than a horse or a donkey? **(1 mark)**
7. What type of hybridization is this? **(1 mark)**
8. Knowing what we do about speciation, what stops similar species from producing fertile offspring? **(2 marks)**
9. A population of grasshoppers lives near a white pebble road and a dark dirt surrounding. Within the population, the grasshoppers vary in color from white to dark brown. With this information, answer the following questions:
10. What is the advantage of there being such a wide range of grasshopper pigmentations? **(2 marks)**
11. Which grasshopper pigmentation(s) do you think is/are the most successful at avoiding predation? **(1 mark)**
12. With this in mind, how might the population shift over time in favor of pigmentation? **(1 mark)**
13. How might this look on a graph? (You can draw it or describe what it would look like). **(1 mark)**

**PART B- Phylogeny**

7)

1. Complete the following cladogram activity: **(5 marks)**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Organism | Wings? | legs? | 6 legs? | 8 legs? | Parasite? |
| Green Fly |  |  |  |  |  |
| Tarantula |  |  |  |  |  |
| Carpenter Ant |  |  |  |  |  |
| Worm |  |  |  |  |  |
| Tick |  |  |  |  |  |

b. Using this knowledge, draw a cladogram separating the organisms by their traits. Be sure to include the names of the animals and where the traits fit on the ‘branches’. \*You can either draw on paper and paste the picture or draw directly onto the doc- whatever is easiest\*. **(5 marks)**

**Part C: Research**

8.Doing some quick research, provide an example of sexual selection found within the animal kingdom. Be sure to include the species name, details on the selection mechanism, and any other relevant details. Be sure to include citations for your work! **(4 marks)**

The end 😊