Practice Exam #3:

**Genetics:** Please refer to you genetics HW to practice monohybrid crosses, standard dominance, co dominance, incomplete dominance and sex linked crosses.



**DNA and RNA Structure:**

1. What are the three components of a nucleotide?

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| --- | --- | --- |
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1. Role of the enzyme following enzymes:

|  |  |  |  |
| --- | --- | --- | --- |
| polymerase 3 | polymerase 1 | Helicase  | Ligase |
|  |  |  |  |

1. ****Fill in the blanks

**DNA🡪Protein**

1. Gene sequence:

 T T A C T T C C A G A C C A C T A

Replication: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Transcription: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Translation: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Evolution & Speciation:**

1. What is a homology?
2. What were the two key observations Darwin made about natural selection?

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**Ecology - Population:**

1. What 2 factors contribute to making a population larger ?

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1. Disease is a density dependent or density independent factors?
2. What is an invasive species? Why are they detrimental to the environment?
3. Same the three survivorship curves, and which is a R strategist and which is a K strategist?

|  |  |  |
| --- | --- | --- |
| **Curve** | **Name:** | **Circle one** |
| A |  | R, K, or Neither |
| B |  | R, K, or Neither |
| C |  | R, K, or Neither |

1. Draw: Logistic growth and label carrying capacity:

1. What is a limiting factor and how is it tied to carrying capacity?
2. How are Boom – Bust population dynamics shown throughout evolution? Think mass extinction.

**Ecology - Community:**

1. Biodiversity
	1. Why is it important?
	2. What three factors are involved?

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| --- | --- | --- |
|  |  |  |

1. There are three types of interspecific interactions, what are they and identify which is +/+, +/-, -/-

|  |  |  |
| --- | --- | --- |
|  |  |  |
| Circle one: **+/+ +/- -/-** | Circle one: **+/+ +/- -/-** | Circle one: **+/+ +/- -/-** |

1. Which of the above results in the competitive exclusion principle?

**Ecology - Ecosystems:**

1. Why are roots so important to primary succession?
2. What is a specie’s niche?
3. Why cant their be more than 6 levels in a food web? *(Think of the 10% rule.)*
4. Why is light so important in a marine Biome?
5. Explain the phosphorus cycle?