**Unit Reviews for Final Exam**

The quality of your work on this assignment is directly related to your success on the final exam. You will need your notebook(s) for this assignment. Follow all instructions carefully and closely. This assignment is worth a QUIZ grade. As this is an assignment based on your needs any copying does not make sense nor will it be tolerated. You must complete 3 unit reviews, but may complete all 6 for bonus on this assignment. **UNITS 4 AND 5 COUNT AS ONE UNIT** due to the nature of their content. There is not a section for unit 8 as we just completed that unit.

**Unit 1: Biochemistry and Cells**

1. Biochemistry

Vocabulary: Choose 5 biochemistry vocabulary words that were difficult FOR YOU and define them.

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| --- | --- |
| Word | Definition |
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Macromolecules: Complete the table below with the information requested.

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| --- | --- |
| **Macromolecule**  **Name** | **Information: Write your answers In this column** |
| Carbohydrates | Purpose/Function:  Made of (Elements):  Name of monomer:  Example of polymer: |
| Lipids | Purpose/Function:  Made of (Elements):  Name of monomer:  Example of polymer: |
| Proteins | Purpose:  Made of (Elements):  Name of monomer:  Example of polymer:  4 levels of protein structure (describe each):  Primary:  Secondary:  Tertiary:  Quaternary: |
| Nucleic Acids | Purpose/Function:  Made of (Elements):  Name of monomer:  Example of polymer: |

1. Cells

Fill in the table below with the function of each organelle listed.

|  |  |
| --- | --- |
| **Type of Organelle** | **Function** |
| Nuclear Envelope |  |
| Smooth Endoplasmic Reticulum |  |
| Ribosome |  |
| Lysosome (Not in Plants) |  |
| Golgi Apparatus |  |
| Mitochondria |  |
| Rough Endoplasmic Reticulum |  |
| Cytoplasm (Cytosol) |  |
| Nucleolus |  |
| Cytoskeleton |  |
| Nucleus |  |
| Cell Membrane (Plasma Membrane) |  |
| Centriole |  |
| Vacuole (Large central vacuole not in Animals) |  |
| Vesicles |  |

1. Create 5 questions about this unit. Provide the answer.

|  |  |
| --- | --- |
| Question | Answer |
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**Unit 2: Cell Division**

1. Cell Cycle: Fill in the table below with the information requested.

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| --- | --- | --- |
| Name of Phase | Events in Phase | Drawing of Phase |
| Interphase: G1 |  |  |
| Interphase: S |  |  |
| Interphase: G2 |  |  |
| Mitosis: Prophase |  |  |
| Mitosis: Metaphase |  |  |
| Mitosis: Anaphase |  |  |
| Mitosis:  Telophase |  |  |
| Cytokinesis |  |  |

1. Meiosis: Fill in the table below with the information requested

|  |  |  |
| --- | --- | --- |
| Name of Phase | Events in Phase | Drawing of Phase |
| Prophase I |  |  |
| Metaphase I |  |  |
| Anaphase I |  |  |
| Telophase I |  |  |
| Prophase II |  |  |
| Metaphase II |  |  |
| Anaphase II |  |  |
| Telophase II |  |  |

1. Compare and contrast mitosis and meiosis

|  |  |  |
| --- | --- | --- |
| Mitosis | Both | Meiosis |
|  |  |  |

1. Create 5 questions about this unit. Provide the answer.

|  |  |
| --- | --- |
| Question | Answer |
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**Unit 3: Reproduction**

1. Oogenesis: Name the structures of oogenesis IN ORDER and describe them

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| --- | --- |
| Name of structure | Description |
|  |  |
|  |  |
|  |  |
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1. Spermatogenesis: Name the structures of spermatogenesis IN ORDER and describe them

|  |  |
| --- | --- |
| Name of structure | Description |
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1. Menstrual Cycle: Describe the role of each of the following hormones in the menstrual cycle

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| --- | --- |
| Hormone Name | Function |
| FSH |  |
| LH |  |
| Progesterone |  |
| Estrogen |  |

While there is not a section on this review about fertilization, embryonic development, and birth you are still responsible for the information.

1. Create 5 questions about this unit. Provide the answer.

|  |  |
| --- | --- |
| Question | Answer |
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**Units 4 and 5: Mendelian Genetics and Non-Mendelian Genetics and Cytogenetics**

1. Choose 5 of the following terms to define from Mendelian genetics:

|  |  |
| --- | --- |
| Term | Definition |
| Character |  |
| Trait |  |
| Genes |  |
| Alleles |  |
| Genotype |  |
| Phenotype |  |
| Dominant Phenotype |  |
| Recessive Phenotype |  |
| Heterozygous |  |
| Homozygous |  |

1. Complete the following crosses- draw the punnett squares in the space below.
   1. Heterozygous crossed with heterozygous- write the phenotypic ratios.
   2. Heterozygous crossed with homozygous dominant- write the phenotypic ratios.
   3. Homozygous dominant crossed with homozygous recessive- write the phenotypic ratios.
2. Choose 5 of the terms below to define from Non-Mendelian Genetics

|  |  |
| --- | --- |
| Term | Definition |
| Incomplete dominance |  |
| Co-dominance |  |
| Epistasis |  |
| Multiple alleles |  |
| Polygenic traits |  |
| Variable expressivity |  |
| Incomplete penetrance |  |
| Phenocopy |  |
| Lethal alleles |  |

1. Complete a dihybrid cross between organisms heterozygous for both traits.

|  |  |  |  |
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1. Create 5 questions about this unit. Provide the answer.

|  |  |
| --- | --- |
| Question | Answer |
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While there are not karyotypes and chromosomal abnormalities on this review you are still responsible for them.

**Unit 6: DNA, RNA, and gene mutation**

1. DNA vs. RNA: Compare and contrast DNA and RNA in as many ways as possible.

|  |  |  |
| --- | --- | --- |
| DNA | Both | RNA |
|  |  |  |

1. DNA Replication: Define DNA Replication then outline the steps in DNA replication in order. BE SURE TO INCLUDE THE ENZYME NAMES and their functions.

Definition:

Steps:

1. Transcription and Translation: Define transcription and translation. Write all the steps in transcription and translation in order. BE SURE TO INCLUDE THE ENZYME/STRUCTURE NAMES and their functions.

Transcription definition:

Translation definition:

Steps in each process:

1. Write the complementary sequence for this DNA strand:

AATTCCAGATACGGATCGGATTCAGAGACTAT

1. Transcribe and translate this DNA sequence:

AATTCCTACAGGTGCACGATCAAGAGC

Transcription:

Codons:

Translation:

1. Create 5 questions about this unit. Provide the answer.

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| --- | --- |
| Question | Answer |
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While there are not mutations on this review, you are still responsible for them.

**Unit 7: Immune system**

1. Describe the levels of the immune system and the parts associated with them

|  |  |  |  |
| --- | --- | --- | --- |
| Level of immunity | Specific or non-specific? | Acquired or Innate? | Structures/Cells involved |
| 1st line of defense |  |  |  |
| 2nd line of defense |  |  |  |
| 3rd line of defense |  |  |  |

1. Outline the steps (in order) for activating the 3rd line of defense.
2. Describe how cytotoxic T cells function once they are activated.
3. Describe how plasma B cells function once they are activated.
4. Create 5 questions about this unit. Provide the answer.

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| --- | --- |
| Question | Answer |
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