**Midterm Review**

***PHOTOSYNESIS/RESPIRATION***

1. What are the reactants for photosynthesis? What are the products?
2. What is ATP?
3. Where in the cell does cellular respiration take place?
4. What is the chemical equation for cellular respiration?
5. How is aerobic respiration different from anaerobic respiration? Which produces more ATP?
6. What process can yeast perform? What are the products of this process?
7. What are the 2 types of fermentation?

***BIOCHEMISTRY***

|  |  |  |  |
| --- | --- | --- | --- |
| Polymer | Monomer | Function | Found |
| Carbohydrate |  |  |  |
| Protein |  |  |  |
| Nucleic Acids |  |  |  |
| Lipids |  |  |  |

*Fill in the chart above*

1. What is the function of an enzyme?
2. How do enzymes work? Draw a picture.
3. What can denature an enzyme?
4. How do plants store carbohydrates? How do animals?
5. What molecule makes up the cell wall?

**CELLS/TRANSPORT**

1. Name the 3 differences between and plant and animal cell?
2. What are the differences between a eukaryote and prokaryote cell?
3. How can you determine the total magnification on a microscope?
4. What is the difference in the course and fine adjustment on a microscope?
5. What structure is semi-permeable? What does that mean?
6. What is homeostasis? Give an example.
7. What is the difference between active and passive transport?
8. Give 3 examples of passive transport?
9. What is osmosis?
10. Why would someone with swollen gums rinse with their mouth with a salt water solution?
11. What would happen to a cell with 50% solute when placed into a solution with 20% solute?
12. Describe the shape of a blood cell and a nerve cell and how it relates to its function.
13. What are stem cells?
14. Define cancer and possible causes.

|  |  |  |
| --- | --- | --- |
| **Organelle** | **Function** | **Location** (plant, animal, all cells) |
| Plasma (cell) membrane |  |  |
| Cell Wall |  |  |
| Ribosome |  |  |
| Mitochondria |  |  |
| Chloroplast |  |  |
| Nucleus |  |  |
| Vacuole |  |  |

*Fill in the chart above*.

***MITOSIS***

1. What are somatic cells? Give an example.
2. Is mitosis sexual or asexual reproduction?
3. What are the 3 phases of the cell cycle?
4. What are the 3 phases of Interphase and what happens in each phase?
5. Draw the 4 phases of Mitosis in order and explain what is happening in each phase.
6. At the end of Mitosis, how many cells do you have? Identical or different?

***DNA/PROTEIN SYNTHESIS***

1. How are DNA and RNA different?
2. What is DNA replication and where does it occur?
3. Where does transcription occur and what is made? Translation?
4. Transcribe and Translate the following strand of DNA: **TCA GTA**
5. What is the role of mRNA and tRNA?
6. What bond holds amino acids together?
7. Define a mutation and the 2 types of mutations.
8. The sequence of nucleotides code for a specific \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

***BIOTECHNOLOGY***

1. What process separates the DNA?
2. What is genetic engineering?
3. What can cut DNA?
4. The process of taking DNA from one organism and placing it in another organism is called?
5. Give an example of a transgenic organism.