Name\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Period\_\_\_\_\_

**EOC Review #2 – Molecular and Cellular Biology**

1. Complete the table:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Biomolecule** | **Elements** | **Subunits** | **Examples** | **Functions** |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |

2. What is the role of an enzyme? How does it affect a chemical reaction?

3. What factors affect the functionality of an enzyme?

4. What does it mean to say that water is cohesive? How is this property useful to organisms?

5. In regards to life on Earth, what is the importance of water’s

 a. cohesive property?

 b. ability to moderate temperature?

 c. expansion upon freezing?

 d. versatility as a solvent?

6. What are the three parts of cell theory?

7. What structures are found in plant cells, but not in animal cells?

8. What is the purpose of the cell membrane?

9. How does the structure of the cell membrane relate to its function?

10. What are some types of passive transport?

11. What are some types of active transport?

12. How are passive and active transport different from one another?

13. Complete the following table for photosynthesis:

|  |  |  |
| --- | --- | --- |
| **Reactants** | **Products** | **Functions/Purposes** |
|  |  |  |

14. Where does photosynthesis take place in plant cells?

15. Where does aerobic cellular respiration take place in eukaryotes?

16. Which types of organisms carry out cellular respiration?

17. Complete the following table for aerobic cellular respiration:

|  |  |  |
| --- | --- | --- |
| **Reactants** | **Products** | **Functions/Purposes** |
|  |  |  |

18. Under what conditions does anaerobic cellular respiration take place? What is it called?

19. Explain the relationship between photosynthesis and cellular respiration.

20. What is the purpose of adenosine triphosphate (ATP) in the cell?

21. How can a mutation trigger uncontrolled cell growth (cancer)?

22. What are the stages of the cell cycle? What events occur during each of these stages?

23. What is the purpose of mitosis?

24. How do the daughter cells produced through mitosis compare with the parent cell?

25. What type of reproduction takes place by way of mitosis?

26. Make a Venn diagram to compare and contrast mitosis and meiosis.

27. Why is sexual reproduction dependent upon meiosis?

28. What parts of meiosis are responsible for increasing genetic variation?