Name \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_Per \_\_\_\_\_\_

**This will be the old topic on the upcoming evolution 2 Test**!

**Biochemistry**

|  |  |
| --- | --- |
| **Carbon Based Molecules (Macromolecules)** |  |
| 1. In order to be considered organic, a molecule must contain this element | **CARBON** |
| 2. What are the four types of macromolecules? | **Carbohydrates, Lipids, Nucleic Acids, Proteins** |
| 3. The formation of polymers from monomers occurs as a result of this type of reaction | **DEHYDRATION SYNTHESIS (REMOVING WATER TO MAKE)** |
| 4. The breakdown of polymers into smaller monomers occurs as a result of this type of reaction | **HYDROLYSIS (ADDING WATER TO BREAK)** |
| 5. Give examples of carbohydrates | **SUGARS AND STARCHES** |
| 6. How do plants use the carbohydrate cellulose? | **MAJOR COMPONENT OF THE CELL WALL** |
| 7. How do you store glucose? (a molecule) | **GLYCOGEN** |
| 8. Give examples of lipids | **FATS. OILS, WAXES AND PHOSPHOLIPIDS** |
| 9. What important lipid makes up the majority of the cell membrane? | **PHOSPHOLIPID** |
| 10. What is the main function of a lipid? | **STORAGE AND INSULATION** |
| 11. What is the monomer for a polypeptide chain? | **AMINO ACID** |
| 12. Where would you find long chains of amino acids, linked by peptide bonds? | **PROTEINS** |
| 13. Give examples of nucleic acids | **DNA AND RNA** |
| 14. What is the function of DNA? | **STORE AND TRANSMIT GENETIC INFO** |
| **Chemical Reactions** |  |
| 15. In a chemical reaction, these are the substances that get changed (the “ingredients”) | **REACTANTS** |
| 16. Another name for a reactant is \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. | **SUBSTRATE** |
| 17. In a chemical reaction, these are the new substances formed | **PRODUCTS** |
| 18. Which are the reactants? | **C4H10 + O2** |
| 19. What are the products? | **CO2 + H2O** |
| 20. The amount of energy needed to initiate a chemical reaction | **ACTIVATION ENERGY** |
| 21. These reactions absorb energy overall. Draw a picture of the energy of this reaction. | **ENDOTHERMIC RXN**  Macintosh HD:Users:janetwolfe:Desktop:Screen Shot 2015-09-14 at 8.30.58 PM.png |
| 22. These reactions release energy overall. Draw a picture of the energy of this reaction. | **EXOTHERMIC RXN**  Macintosh HD:Users:janetwolfe:Desktop:Screen Shot 2015-09-14 at 8.30.58 PM.png |
| **Enzymes** |  |
| 23. Without these, the chemical reactions in your cells would occur too slowly to support life’s processes. | **ENZYMES** |
| 24. Reactants in a chemical reaction are also called: | **SUBSTRATES** |
| 25. What is the name of the place on an enzyme where the substrate binds? | **ACTIVE SITE** |
| 26. Enzymes are composed of what monomer? | **AMINO ACIDS** |
| 27. List two factors that can impact the activity of an enzyme | **TEMP**  **pH** |
| 28. Complete the following statement: Enzymes are very specific to the types of reactions that they are involved in, however once the reaction is complete……. | **THEY CAN BE REUSED IN ANOTHER REACTION.** |
| 29. If any of your answers to # 42 above changes too drastically, what happens to the enzyme? | **DENATURE; CHANGE SHAPE AND THEREFORE ALTER THE FUNCTION** |
| 30. Draw a graph comparing the energy pathways of a reaction without an enzyme and one with an enzyme. | Macintosh HD:Users:janetwolfe:Desktop:Screen Shot 2015-09-14 at 8.33.43 PM.png |