

Name: \_\_\_\_\_ Block: \_\_\_\_\_ Date: \_\_\_\_\_

**Biology 12 - Biologically Important Molecules – Review Worksheet**

- **Part A: Mix and Match:** Match the term on the right with the definition on the left. Each term can be used only once. Write the letter of the best answer in the box to the left of the definition. (1/4 mark each -- total of 10 marks for this section)

1)	water-"loving"	A)	adenosine triphosphate
2)	water-"fearing"	B)	amino acid
3)	two or more polypeptide chains coming together and bonding with each other	C)	atom
4)	to permanently change the 3 dimensional structure of a protein	D)	buffer
5)	the subunit that makes up nucleic acids - 4 types in DNA are A C G T	E)	carbohydrate
6)	the smallest unit of matter that cannot normally be broken into smaller particles	F)	cellulose
7)	the process of breaking down large fat droplets into smaller fat droplets	G)	cholesterol
8)	the loose association of amino acids in a polypeptide chain with each other, usually through H-bonds. e.g. alpha helix, beta pleated sheet	H)	dehydration synthesis
9)	the linear sequence of amino acids in a protein, which ultimately determines its shape	I)	denature
10)	the building block of protein -- there are 20 different kinds normally found in nature	J)	emulsification
11)	the bond that forms between two amino acids joined by dehydration synthesis	K)	enzymes
12)	the 3-D shape of a polypeptide chain due to it folding back on itself and forming bonds.	L)	glucose
13)	molecules with identical empirical formulas but different structural arrangements of atoms	M)	glycogen
14)	elements with identical atomic numbers, but different number of neutrons	N)	hydrogen bond
15)	creating a bond between two atoms by taking OH from one atom and H from the other	O)	hydrolysis
16)	breaking a bond between two atoms by adding OH to one atom and H to the other	P)	hydrophobic
17)	biological catalysts, composed of protein, that speed up chemical reactions	Q)	hydrophilic
18)	ATP - the molecule that carries energy in the cell	R)	ion
19)	any molecule with the molecular formula $C_n(H_2O)_n$	S)	isomers
20)	an important component of cell membranes, has a hydrophilic head, hydrophobic tail	T)	isotopes
21)	an enzyme that breaks down maltose to two glucose molecules	U)	lipid
22)	an atom or molecule that has either lost or gained electrons	V)	maltase
23)	a weak bond due to the attraction between partial charges on hydrogen, oxygen, and nitrogen atoms	W)	maltose
24)	a polymer of glucose, used as a structural component of plant cell walls	X)	neutral fat
25)	a polymer of glucose, used as a storage form for glucose in animals	Y)	nucleotide
26)	a polymer of glucose, used as a storage form for glucose in plants	Z)	oxidation
27)	a loss of Hydrogen atoms (or electrons)	AA)	peptide bond
28)	a lipid that is an important component of cell membranes and from which steroid hormones are made	BB)	phospholipid
29)	a lipid composed of glycerol joined to 3 fatty acids	CC)	polymer
30)	a large organic molecule formed from a chain or chains of amino acids	DD)	primary structure
31)	a large molecule made by joining together smaller identical (or similar) molecules	EE)	protein
32)	a gain of Hydrogen atoms (or electrons)	FF)	quarternary structure
33)	a fatty acid whose carbons are all joined to the maximum number of hydrogens	GG)	reduction
34)	a fatty acid that has a "kink" in it due to a double bond between carbon atoms	HH)	saturated fatty acid
35)	a disaccharide consisting of two glucose molecules	II)	secondary structure
36)	a class of molecules that includes neutral fats and steroids	JJ)	starch
37)	a chemical that resists changes in pH	KK)	tertiary structure
38)	a 6 carbon sugar that forms a 6-membered ring -- used as energy source by cells	LL)	unsaturated fatty acid
39)	three carbon that joins with fatty acids to produce triglycerides	MM)	nucleic acids
40)	molecules that store genetic information (e.g. DNA and RNA)	NN)	glycerol

**Part B - Short Answers - 1/2 Mark for each blank**

1. The atomic number for carbon is six; therefore, carbon has \_\_\_\_\_ protons and \_\_\_\_\_ electrons.