## **Basic Chemistry & Biochemistry Unit Review**

AME:	vocabulary terms in th	ne following list fill in	n the blacks in	_Period:			
Element	neutron	ampound atom	hydro				nuclaur
	neutron co		nyuru		lieus	pri	nucleus
Atomic nu	imber inorgani	c ionic b	onding	polymer	COVC	alent boi	nding
Isotopes	polysaccharide	dehydration	synthesis	mass num	ber	proto	n
Acids	disaccharide	monosacchar	ride	reactants	5	elect	ron
1. A subs	stance that cannot be l	proken down into othe	er substances b	y ordinary cl	nemical n	neans is a	(n)
2. A subs	tance formed by the o	chemical combination	s of two or mo	ore elements i	is a(n)		
3. The ba	sic unit of structure o	f all elements is the _		·			
4. Atoms	are made up of three	types of particles:		,		, a	nd
5. The de	ense central portion of	the atom is the					
6. The nu	mber of protons in th	e nucleus of an atom	is the		0	of the elem	nent.
7. The nu	umber of protons plus	the number of neutro	ns in the nucle	us of an aton	n is its		
8. Differe	ent varieties of the same	ne elements having di	ifferent numbe	ers of <i>neutron</i>	s in their	nuclei are	e called
9. Chemi	cal bonding in which	there is a transfer of e	electrons from	one atom to	another is	s a(n)	
10. Chemi	cal bonding in which	there is a sharing of e	electrons betwe	een atoms is a	a(n)		
11. Measu	rement of the hydrog	en ion concentration c	_· of a solution m	ay be given i	n terms o	f	
12. Glucos starch	se is a is a		, maltose ·	e is a			, an
13. The typ	pe of reaction by whi	ch proteins are synthe	esized is		·		
14. The typ	pe of reaction by whi	ch carbohydrates are b	broken down is	5			
15. Large 1	molecules made up o	f chains of repeating u	 units are				
16	compounds do not contain carbon.						
17	are substan	ces that fall between (	0-6.9 on the pH	H scale.			
18. Substa	nces to the <i>left</i> of the	yields arrow in a cher	mical equation	are called			·

## **B.** *Place the letter of the definition in the space to the left of the term it defines.*

1. amino acid	<b>A.</b> Type of reaction by which complex molecules are synthesized from simple molecules				
2 enzymes	$\mathbf{B}$ A substance composed of similar repeating units				
<u> </u>	<b>C.</b> Proteins that act as organic catalysts.				
4. unsaturated fat	<b>D.</b> Digestion is accomplished by this type of reaction.				
5. amino group	E. COOH				
6. hvdrolvsis	F. RNA and DNA				
7. carboxyl group	G. Alcohol found in lipids.				
8. dehydration synthesis	H. Monomer of proteins				
9. glycerol	I. A lipid containing 1 double bond between the carbon atoms.				
10. polymer	J. NH <sub>2</sub>				
C. In the answer space for each	question, write the letter of the choice that best completes the statement.				
1. An atom has 14 electrons. Its	s <u>third</u> energy level has electrons. (a) 1 (b) 2				
(c) 3 (d) 4					
2. The part of an enzyme that at (b) Coenzyme (c) acti	ttracts and holds the substrate is the (a) substrate site ve site (d) competitive inhibitor				
3. Unlike carbohydrates and fat phosphorus (d) nitrogen	s, proteins contain atoms. (a) carbon (b) oxygen (c)				
4. How many electrons can a ca	arbon atom share? (a) 1 (b) 2 (c) 3 (d) 4				
5. The nucleus of an atom conta (c) protons & neutrons (d) only neut	ains (a) protons & electron (b) neutrons & electrons trons				
6. A pH of 7 indicates a (a) stro Organic compounds always contain (a) of	ong acid (b) strong base (c) neutral solution (d) weak base7. oxygen (b) proteins (c) nitrogen (d) carbon				
8. Carbohydrates are composed hydrogen (c) carbon,	of (a) carbon, nitrogen, and oxygen (b) nitrogen, oxygen, and hydrogen, and oxygen (d) sulfur, nitrogen, and carbon				
9. Glucose and fructose are both (d) starches	h (a) monosaccharide (b) disaccharides (c) polysaccharides				
10. Maltose and sucrose are bot (d) starches	th (a) monosaccharide b) disaccharides (c) polysaccharides				
11. Monosaccharides join to for (c) dehydration synthesis (d) dehydrolys	rm disaccharides by (a) hydrolysis (b) hydration				
12. Disaccharides are broken do (b) hydration (c) dehy	own into their component monosaccharides by (a) hydrolysis /dration synthesis (d) dehydrolysis				
13. Cellulose and glycogen are (d) disaccharides	(a) proteins (b) fatty acids (c) polysaccharides				
14. Simple lipids consist of (a (c) glycerol only (d) as	a) three fatty acid molecules and one glycerol (b) fatty acids only mino acids				

- \_\_\_\_15. The bonds between amino acids in proteins are (a) peptide bonds (b) unsaturated (c) hydrolytic (d) carboxylic
- \_\_\_\_16. Enzymes are (a) carbohydrates (b) lipids (c) proteins (d) hormones

\_\_\_\_\_17. Enzymes (a) decrease reaction rates (b) increase reaction rates (c) are involved only in synthetic reactions (d) are involved only in hydrolytic reactions

- 18. Nucleic acids are composed of (a) C, H, O, N, P (b) C, H, O, N (c) C, H, O, N, S (d) C, H, O
- 19. DNA (a) is the site of protein synthesis (b) contains the hereditary information (c) is found only in the cytoplasm (d) is found only in the animal cells
- 20. RNA is involved in (a) lipid synthesis (b) carbohydrate synthesis (c) protein synthesis (d) DNA synthesis
- 21. How many <u>water molecules</u> are present, in the following chemical equation?  $2H_2O \rightarrow 2H_2 + O_2$ (a) one (b) two (c) three (d) none
- 22. How many <u>hydrogen atoms</u> are present, in the following chemical equation?  $2H_2O \rightarrow 2H_2 + O_2$ (a) one (b) two (c) three (d) four

23. \_\_\_\_\_consist of the majority of fat in an organism. (a) saturated fats b) carbohydrates (c) triglycerides (d) unsaturated fats

**D.** *Identification: Identify each of the following types of monomers or polymers.* 



