BC Uı	nit 2	Review
Multip Identify		noice choice that best completes the statement or answers the question.
	1.	Alcohols must contain a(n)? a. carbonyl group b. oxygen group c. hydroxyl group d. carboxyl group
	2.	Aldehydes must contain a(n)? a. carbonyl group b. oxygen group c. hydroxyl group d. carboxyl group
	3.	Carboxylic acids must contain a(n)? a. carbonyl group b. oxygen group c. hydroxyl group d. carboxyl group
	4.	Which of the following is most soluble in water? a. an alcohol b. a diol c. a triol d. none, they are not soluble in water
	5.	Which of the following alcohols has the lowest boiling point? a. 1-pentanol b. 1,5-pentanediol c. 1,3,5-pentanetriol d. none, they have the same boiling point
***************************************	6.	Of the compounds listed below which would have the highest boiling point? a. alkane b. alcohol c. ketone d. aldehyde
	7.	In which class of compounds can not be oxidized any further? a. alcohols b. aldehydes c. ketones d. none of these
	8.	If experimental conditions are carefully controlled, ketones can be obtained by the oxidation of which of following? a. 1° alcohols b. 2° alcohols c. 3° alcohols d. none of these
	9.	Which of the following describe the properties of ethers? a. are very reactive c. good solvents b. are inert d. b and c
	10.	Which structural feature is common to aldehydes and ketones a. an oxygen atom bonded to both a carbon atom and a hydrogen atom b. an oxygen atom bonded to two carbon atoms c. an oxygen atom double bonded to a carbon atom d. two oxygen atoms bonded to the same carbon atom

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*****	 11.	Which of the following functional groups must always be an internal location? a. aldehyde
	 12.	 When is it ok to leave off the numeric locator? a. when the constituent is located on carbon #1 b. when the longest carbon chain contains the constituent c. when the constituent is on the last carbon d. when the constituent is located on the middle carbon
valen	 13.	In the name 3-ethyl-2-heptenal the numbers represent which of the following? a. the position of the substituent and the position of the carbonyl group b. the position of the substituent and the position of the double bond c. the position of the carbonyl group and the position of the double bond d. none of the above, since the name does not correspond to a real compound
	 14.	Which of the following is a correct IUPAC name? a. 1-ethylbutanal b. 2-ethylbutanal c. 3-ethylbutanal d. none of these
_	 15.	What is the IUPAC name of propyl butyl ketone? a. 4-octanone c. 3-methyl-4-heptanone b. 2-methyl-4-heptanone d. 2,2-dimethyl-3-hexanone
_	 16.	Which of the following is least soluble in water? a. butanal b. heptanal c. hexanal d. pentanal
	 17.	Which of the following is obtained by oxidizing 2-butanone? a. butanal b. butanol c. butanoic acid d. none of these
	18.	Which of the following is obtained by the reduction of 2-hexanone? a. 2-hexene b. 1-hexanol c. 2-hexanol d. 3-hexanol
	 19.	Which of the following must be present in a carboxylic acid? a. a carbonyl group and a hydroxyl group bonded to different carbon atoms b. a carbonyl group and a hydroxyl group bonded to the same carbon atom c. an ether linkage and hydroxyl group on the same carbon atom d. two ether linkages to the same carbon atom
	 20.	Which of the following is the correct IUPAC name of a carboxylic acid which contains five carbon atoms? a. pentanionic acid b. pentanoic acid c. 2-pentanoic acid d. 5-pentanoic acid
_	 21.	How many carboxylic acids have the formula $C_3H_6O_2$? a. 1 b. 2 c. 3 d. 4
_	 22.	When compared with the boiling points of other compounds of comparable molecular weight, which of the following is true of the boiling points of carboxylic acids? a. they are significantly lower than the boiling points of other compounds b. they are slightly lower than the boiling points of other compounds c. they are slightly higher than the boiling points of other compounds d. they are significantly higher than the boiling points of other compounds

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23	What is the process used when a carboxylic acid is changed into a primary alcohol? a. oxidation c. hydrolysis	
	b. reduction d. dehydration	
24	Which of the following is a dietary source of carbohydrates? a. plant material b. hamburger c. milk d. all of the above	
25	Which of the following is true of the hydrolysis of carbohydrates? a. carbohydrates cannot be hydrolized b. hydrolysis of carbohydrates can only yield polyhydroxyaldehydes c. hydrolysis of carbohydrates can only yield polyhydroxyketones d. hydrolysis of carbohydrates can yield polyhydroxyaldehyles and/or polyhydroxyl	ketones
26	The reaction of monosaccharides to form a disaccharide is an example of which of the a. condensation b. hydrolysis c. reduction d. oxidation	~
27	Which of the following is a common pentose? a. ribose b. glucose c. fructose d. maltose	
28	An $\alpha(1 \rightarrow 4)$ glycosidic bond is found in which of the following? a. galactose b. maltose c. glucose d. all of these	se
29	Structural polysaccharides include? a. cellulose and chitin b. cellulose and glycogen c. cellulose and maltose d. cellulose and heparin	
30	A glycosidic bond (linkage) is chemically? a. an ester b. an aldehyde c. an alcohol d. a ketone	

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10. Decribe the difference between 1°, 2°, and 3° alcohols. Which can be used to create an aldehyde, which can be used to create a ketone? 11. List two important physical properties of alcohols. 12. Describe how the sweetness changes between mono and disaccharides to polysaccharides. 13. List the monosaccharides that bond together to form the following disaccharides. a. sucrose: b. maltose: c. lactose: 14. Using Benedict's reagent is one the most common testing methods for glucose. Describe how the reaction works and what does a positive result look like. 15. Describe what happens in the body when the blood glucose level rises to 200 mg/dL. Complete the following illustrations. 16. pentan-3-ol 17. cyclohexanone 19. glucose (aliphatic) 18. 3-methyl butanal

Identify and complete the following reactions. 20. type:
 C-C-C-C-OH 180.
180
21. type:
C-C-C-C + O ₂ combustion OH
22. type:
D-fructose H2 catalyst NaBH4
23. Illustrate the formation of a cyclic hemiacetal from a aliphatic form of glucose.
24. Where is the enzyme amylase formed and what does it do?
25. Describe the reaction process by which monosaccharides are linked together to form a

polysaccharide.