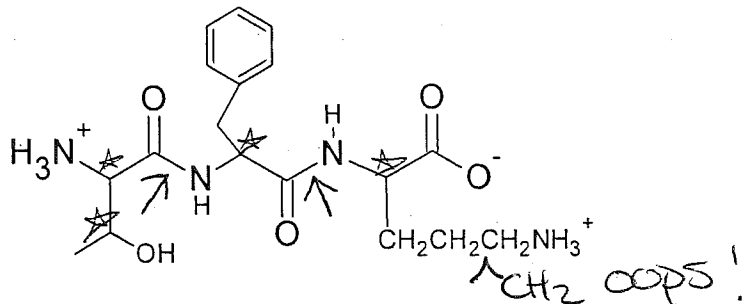


Quiz 9
3 pts of extra credit

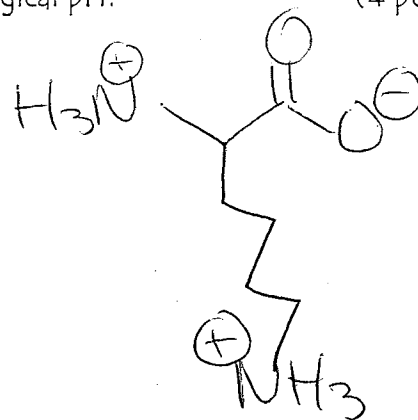
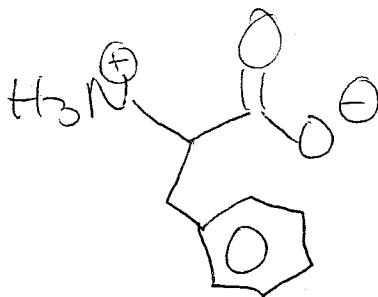
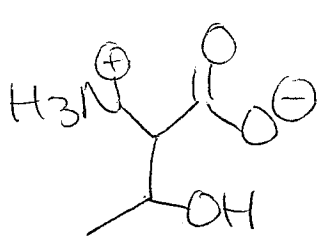
1. Use the tripeptide below to answer the following questions.



- a) Draw an arrow pointing to each of the peptide bonds. (1 pt)
- b) Use the 3-letter abbreviations to write the amino acid sequence. (1 pt)

Thr - Phe - Lys

- c) Draw the hydrolysis products of the tripeptide at physiological pH. (4 pts)



- d) Star the chiral carbons in the tripeptide. (2 pts)

see above

2. Match the isomer to its definition: CI = constitutional isomer; CF = conformer; GI = geometric; E = enantiomer. (1 pt)

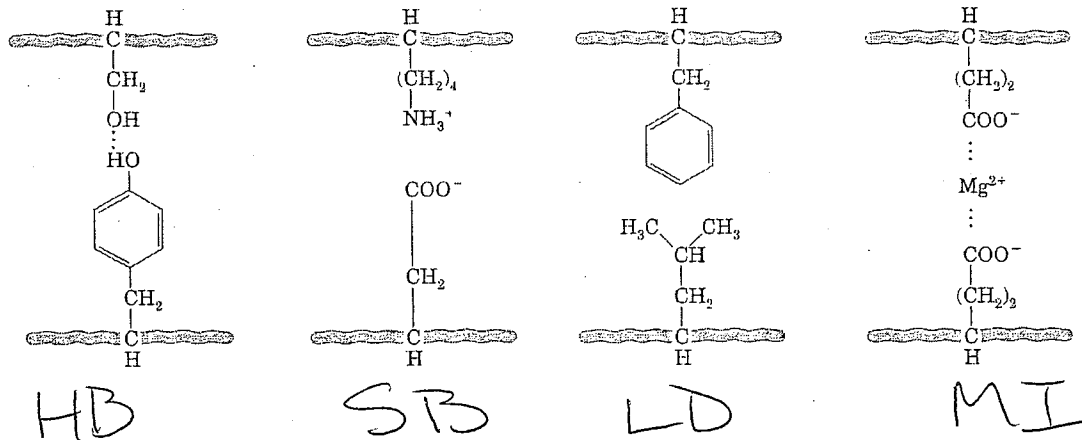
E non-superimposable mirror images

CI same chemical formula with different connections between atoms

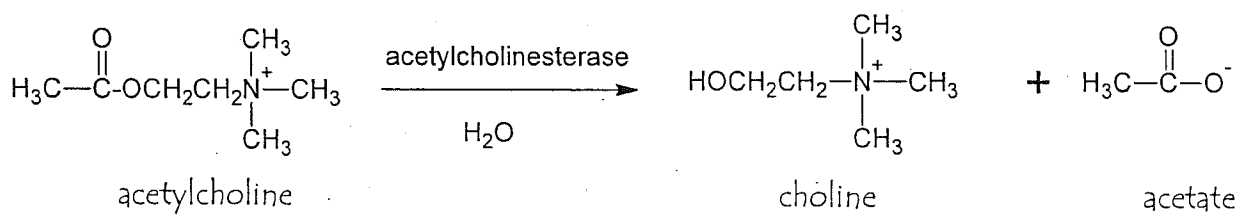
CF same compound shown in different rotations around tetrahedral carbons

GI cis/trans isomers

3. Classify the 3° interactions below as salt bridge (SB), London dispersion (LD), H-bonding (HB), or metal-ion complexes (MI). (2 pts)



4. Acetylcholine (Ach) is a neurotransmitter responsible for the control of skeletal muscles. After acetylcholine has triggered a muscle movement, it is deactivated by the enzyme acetylcholinesterase to avoid over stimulation of the muscle. The reaction is shown below.

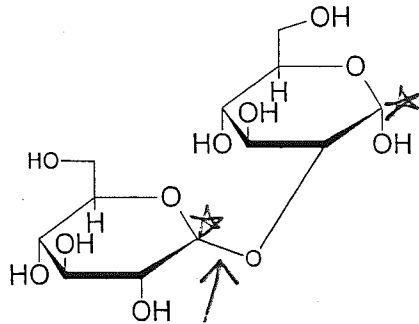


a) What type of reaction does acetylcholine undergo - hydration, dehydration, oxidation, reduction, synthetic dehydration, or hydrolysis? (1 pt)

b) Nicotine interacts with acetylcholinesterase at the active site for acetylcholine. Is nicotine a competitive or non-competitive inhibitor for the reaction above? (1 pt)

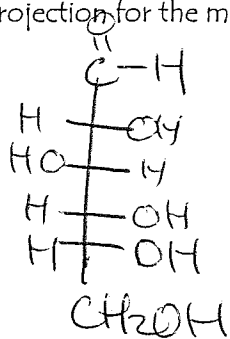
Quiz 10

1. Kojibiose is a disaccharide. Use the structure of kojibiose below to answer the following questions. (5 pts)

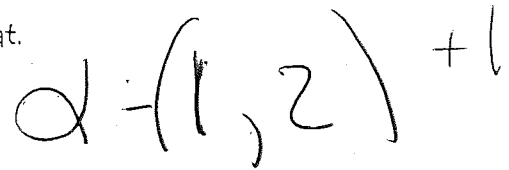


- a) Draw an arrow pointing to the glycosidic bond. + 1/2
- b) Star the anomeric carbons. + 1/2
- c) This disaccharide is made from two molecules of the same monosaccharide. What is the name of this monosaccharide? glucose + 1

d) Draw the Fischer projection for the monosaccharide the forms kojibiose.



e) Classify the glycoside bond using the α or β -(#, #) format. + 1

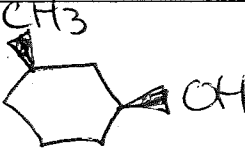
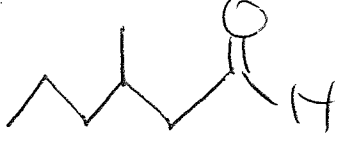
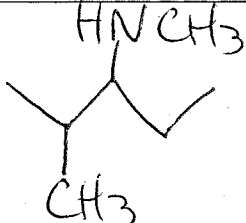


f) Is kojibiose a reduce sugar? Explain.

yes, the monosaccharide (glucose) on the right can open & become oxidized. + 1

2. Complete the table below.

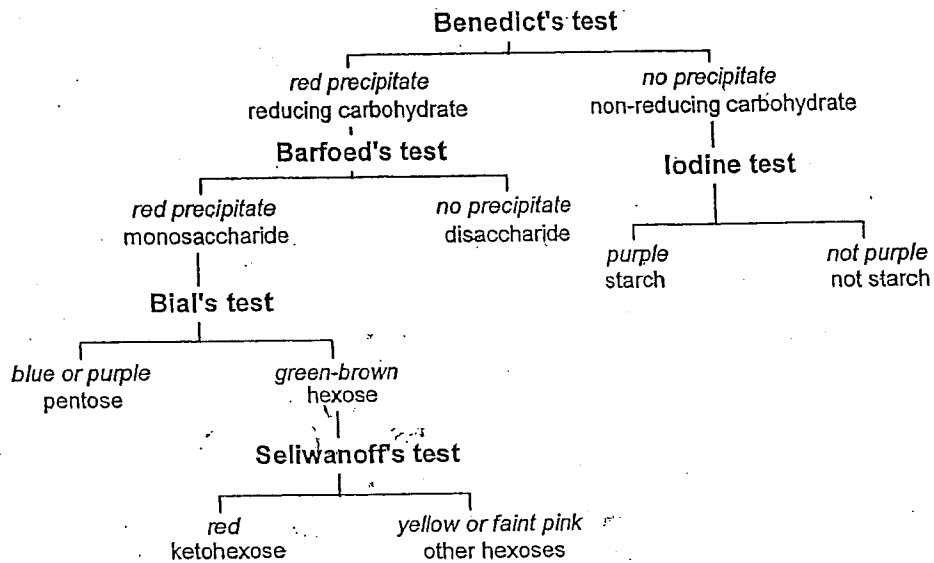
(7 pts)

CHEMICAL FORMULA for inorganic compounds & SKELETAL-LINE STRUCTURE for organic compounds	chemical name (IUPAC for organic compounds)
<p>or both dashes</p> 	cis-3-methylcyclohexanol
HBr	hydrobromic acid
$\text{Ca}(\text{HCO}_3)_2$	calcium bicarbonate
$\text{Pb}_3(\text{PO}_4)_2$	lead(II) phosphate
	3-methylhexanal
BaSO_4	barium sulfate
	N,2-dimethyl-3-pentanamine

Take Home Quiz – Due at the break of our next lecture session.

1. The results from testing five different unknown sugar solutions are summarized in the table below. The possible identities of the sugars are ribose, glucose, fructose, lactose, sucrose, and starch. Use the test results and flow chart to identify the unknown sugars. Record your answers in the table below. (5 pts)

Unknown	Benedict's	Barfoed's	Bial's	Seliwanoff's	Iodine
1	blue	blue	yellow	yellow	purple
2	red ppt	red ppt	purple	yellow	yellow
3	blue	blue	yellow	yellow	yellow
4	red ppt	red ppt	green-brown	red	yellow
5	red ppt	blue	yellow	yellow	yellow



Unknown	Identity
1	starch
2	ribose
3	sucrose
4	fructose
5	lactose

2. Which of the following terms apply to the compound shown below?

For the terms that apply, CIRCLE and LABEL the corresponding portion of the molecule to support your answer. Some circle may overlap.

Only answers correlated to the structure will earn points.

(5 pts)

a) glycolipid

b) phospholipids

c) steroid

d) sphingolipid

e) ketone

f) sphingosine

g) carboxylic ester

h) glycerophospholipid

i) amide

j) lipid

k) glycerine

l) phosphate ester

m) amino acid

n) alcohol

1/2 pt each

+1 for all correct

-1/2 for each error

