KEEP THIS CLOSED ON YOUR DESK UNTIL THE START OF THE TEST

NO NOTES or BOOKS PERMITTED

BCH 2333A

Test 1

Professor: Mezl[A]

Tuesday February 4, 2014

16 QUESTIONS - 30 MINUTES

Materials needed: One computer answer sheet
This exam

Two carbon atoms and Faculty of Science approved calculators are permitted.

INSTRUCTIONS

Pick **the BEST answer** for each multiple choice question

AT THE END - Verify that your name (just your last name in the Surname section!) and especially your student number are on the answer sheet.

Keep the test.

Hand in just the computer answer sheet.

1. The approximate size of a eukaryotic cell :

A) 100 nm B) 2 μm C) 25 μm D) 300 μm E) 4,000 μm

2. This question identifies the version of the test that you are writing.

Verify that it says **A** on your answer sheet as the answer to this question.
IF IT DOES NOT INFORM THE PROCTOR IMMEDIATELY!

3. The diameter of the earth is about ..... km.

A) 6,000 B) 10,000 C) 14,000 D) 22,000 E) 40,000

4. When a plant takes CO_2 and converts it to sugars, the plant also ..... water.

A) oxidizes B) reduces C) hydrolyzes D) rearranges E) dehydrates

5. A solution contains a strong acid that is 2 10^{-5} M. The pH will be about:

A) 4.1 B) 4.3 C) 4.7 D) 5.3 E) 5.7

6. Urea is:

A)	B)	C)	D)	E)
NH_2 | C=O | NH_2	NH_3^+ | C=O | NH_3^+	O-NH_2 | C=O | O-NH_2	OH | C=O | NH_2	NH_2 | CH_2 | NH_2

7. You have prepared a 5mg/ml protein solution in 0.5 M salt. To remove the salt, you seal 10 ml of the protein in a dialysis bag and you dialyse it against 1 L of buffered water. At the end of your dialysis the salt concentration in the dialysis bag will be about :

A) 0.055 M B) 50 mM C) 5 mM D) 0.55 mM E) less than 5uM

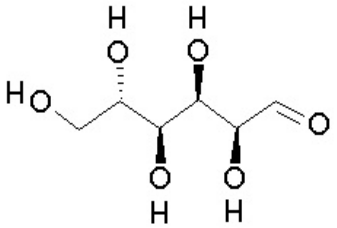
8. At pH 3, the ratio of H^+ to H_2O is about: :

A) 1/5,000 B) 1/50,000 C) 1/500,000 D) 1/5,000,000 E) 1/50,000,000

9. D-glyceraldehyde is:

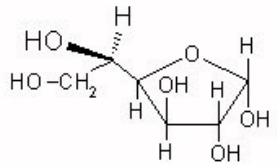
(A)	(B)	(C)	(D)	(E)
CH_2OH H┼OH CHO	CHO HO┼CH_2OH H	OH $HOCH_2$┼H CHO	OH H┼CHO CH_2OH	H HO┼CH_2OH CHO

10. The molecule on the right is:



A) L-Glucose
B) L-mannose
C) D-galactose
D) A L-sugar but not one of the ones to know by heart
E) A D-sugar but not one of the ones to know by heart

11. The structure on the right is:



A) D-Glucose
B) L-Mannose
C) D-Galactose
D) An L-sugar but not one of the ones to know by heart
E) A D-sugar but not one of the ones to know by heart

12. D-Glucose and L-Mannose will have different configurations at carbon :
A) 2, 5 B) 2, 3, 4 C) 2, 3, 4, 5 D) 3, 4, 5 E) 5

13. How much of your blood would you have to take to get 0.2 mg of glucose?

A) 0.1 ml B) 0.2 ml C) 0.4 ml D) 0.8 ml E) 1.6 ml

14. If you chemically reduce the keto group of fructose to an alcohol :
A) You will get glucose
B) Half of the product will have the same chiral configurations as glucose
C) All the product will have the same chiral configurations as glucose
D) You will get mannose
E) You will get galactose

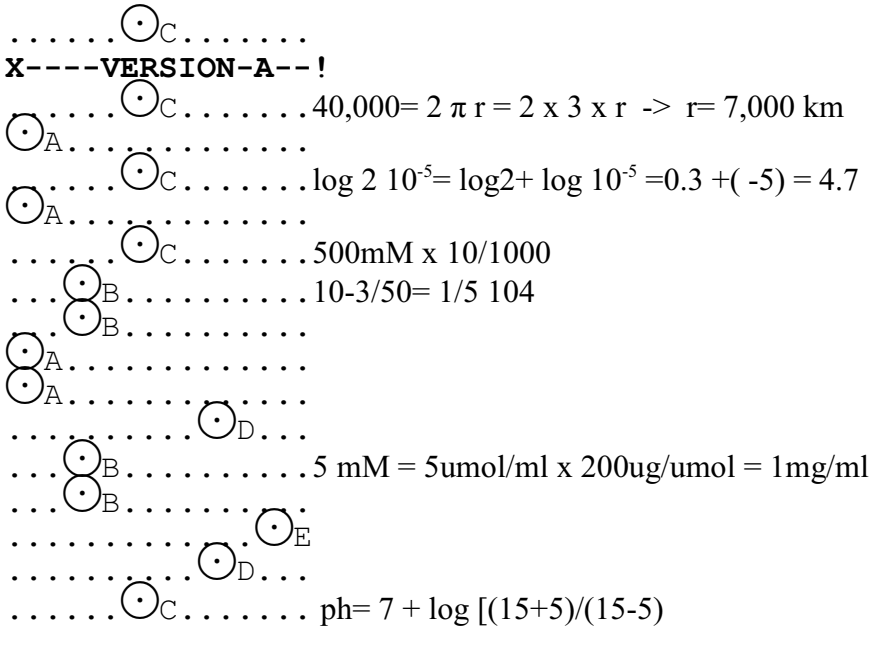
15. An acetal is
A) more reduced than an aldehyde
B) more oxidized than an aldehyde
C) a molecule that contains an alcohol linked to an acetyl group
D) a molecule that contains two alcohol groups linked to two acetyl groups
E) a hidden aldehyde

16. Lactose is

A) glucose linked α-1,3 to a glucose
B) glucose linked α-1,4 to a glucose
C) galactose linked α-1,4 to a glucose
D) galactose linked β-1,4 to a glucose
E) glucose linked β-1,4 to a glucose

17. A 1 L solution contains a 30 mM weak acid that has been adjusted to pH 7. The pK of the weak acid is 7. You add 5 milliequivalents of base. The new pH is:

A) 6.7 B) 7.15 C) 7.3 D) 7.45 E) 7.6


C
X----VERSION-A--!
C
40,000= 2 π r = 2 x 3 x r -> r= 7,000 km
A
C
log 2 10-5= log2+ log 10-5 =0.3 +(-5) = 4.7
A
C
500mM x 10/1000
B
10-3/50= 1/5 104
B
A
A
D
B
5 mM = 5umol/ml x 200ug/umol = 1mg/ml
B
E
D
C
ph= 7 + log [(15+5)/(15-5)