ANSWERS ARE ON THE END. THIS IS VERSION A

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 5, 2013

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. Reading question: A cell wall surrounds the plasma membrane in :

A) prokaryotes B) eukaryotes C) plant cells
D) A and B E) A, B and C

2. You plan to use air for a scuba dive to the Andrea Dorea (a famous wreck that is 100 m down in the ocean). When you are on the bottom you will be breathing oxygen that is at a concentration of about :

A) 2 Atm B) 4 Atm C) 6 Atm
D) 8 Atm E) 11 Atm

3. Urea:

A) has the general structure C-C-N
B) is NH_3 coupled to CO_2
C) is abbreviated NADPH
D) A and B
E) A, B and C

4. In human metabolism, we use air as a substrate and we breathe off water. This reaction is an/a ..... of the air.

A) oxidation B) reduction C) dehydration
D) hydrolysis E) rearrangement

5. A solution has a pH of 6.7 . The concentration of H^+ is about:

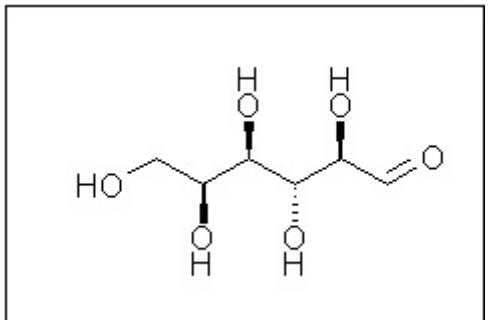
A) $4\ 10^{-6}$ B) $8\ 10^{-7}$ C) $1\ 10^{-7}$ D) $2\ 10^{-7}$ E) $5\ 10^{-7}$

6. D-glyceraldehyde is :

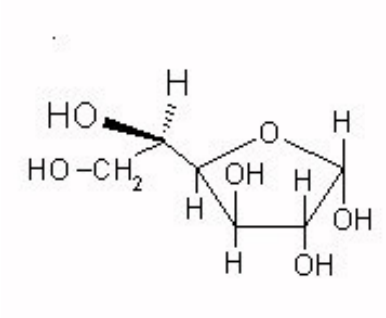
CH_2OH	H	OH	OH	CHO
H┼OH	HO┼CH_2OH	$HOCH_2$┼H	H┼CHO	HO┼CH_2OH
CHO	CHO	CHO	CH_2OH	H
(A)	(B)	(C)	(D)	(E)

7. The molecule on the right is:

A) D-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



Call this sugar Testose
and use it for the next five questions.



8. Testose is a:

A) D-furanose B) L-furanose
C) D-pyranose D) L-pyranose
E) D-pentanose

9. In terms of anomers, Testose is a:

A) α-pentose B) β-pentose
C) α-hexose D) β-hexose
E) a sugar that does not have an anomeric group

10. Testose is :

A) Fructose B) Glucose
C) Mannose D) Galactose
E) a sugar that you do not have to know by heart

11. Testose contains

A) an acetal B) a hemiketal C) a hidden aldehyde
D) a blocked anomeric group E) a carbon oxidized to the level of carboxyl

12. Give the carbon number for the most oxidized carbon/s on testose:

A) 1 B) 2 C) 2, 3, 4 D) 5 E) 6

13. Lactose :

A) is a reducing sugar
B) contains an α glycosidic bond
C) contains a β glycosidic bond
D) A and B
E) A and C

14. The concentration of hydroxide ion in a solution that has a pH of 9 is about :

A) 10 mM
B) 10 μM
C) 1 nM
D) 0.1 nM
E) 1 pM

15. 1 L of a 50 mM weak acid (pK = 7) was adjusted to pH 7. If you add 10 millimoles of acid, the pH will be :

A) 5.7
B) 6.0
C) 6.3
D) 6.6
E) 6.9

16. The moon is about ..... km away from the earth.

A) 4,000
B) 40,000
C) 400,000
D) 4,000,000
E) 40,000,000

17. 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!

130207 update: The mark that you will receive does not take into account that
E is also an acceptable answer for the reading question.
A recorrection is being done

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1        .....C.......        ...B..........        ...B..........
2        A............        ....C.......        ...B..........
3        ...B.........        A............        ...B.........
4        ...B.....D...        ............E        .....C.......
5        ........E...        ...B.........        .........D...
6        .........D...        .........D...        .........D...
7        A............        ........D...        A............
8        ....C.......        ...B.........        ....C.......
9        ...B.........        A............        A...........
10       ....C.......        A............        ...B.........
11       A...........        .....C.......        ....C.......
12       ........E...        .....C.....         A............
13       ...B.....D...        .......D...        .....C.....E
14       .......D...         .....C.....        ........D...
15       .....C.......        ........E...        ...........E
16       X----VERSION-A--!    ---X-VERSION-B--!    VER-C-X---VER-C-!
17
18
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Exam:Date:File:          Exam:Date:File:          Exam:Date:File:
.t3aa.\__ans_            .t3ab__ans_              .t3acans_
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Calculations - Version A

2 100m= 11Atm x 0.2

5 log H+= -6.7= L-6 +L(-0.7)= L(-6-1)+L (1-0.7) -> H+ =2 10^{-7}

7 oooL

8-12 testose is αDGlucofuranose pg S-14

14 H+=10-9 -> OH- = 10-5M= 10 10-6M

15 =7 + log (25-10/25+10=15/35 ~2) = 7- 0.3= 6.6