Exam 2016
Organic Chemistry
Test no.1

Each item has only one correct answer. Choose the correct answer among options given by marking one letter:

1. Percentage of carbon for a hydrocarbon with 14.29% H is:

    a. 0%;
    b. 14.29%;
    c. 85.71%.

2. How many π bonds are there in acetylene?

$$H-C\equiv C-H$$

    a. 2;
    b. 3;
    c. 1.

3. The general formula for alkines is:

    a. C_nH_{2n+2};
    b. C_nH_{2n};
    c. C_nH_{2n-2}.

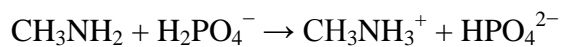4. A solution with the hydrogen ion concentration of 10^{-9} M is:

    a. neutral
    b. acidic
    c. basic

5. The correct IUPAC name for the compound $CH_3-CH=C-CH_2-CH_3$ is:
$$\underset{\displaystyle CH_3}{|}$$

    a. 3-methyl-3-pentene;
    b. 2-ethyl-2-butene;
    c. 3-methyl-2-pentene.

6. In the reaction:
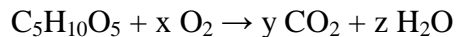
$$CH_3NH_2 + H_2PO_4^- \rightarrow CH_3NH_3^+ + HPO_4^{2-}$$

the $H_2PO_4^-$ ion acts as:

    a. an acid;
    b. a base;
    c. a catalyst.

7. Which of the following contains only single bonds?

    a. H_2CCHCH_3
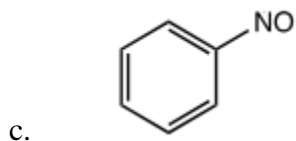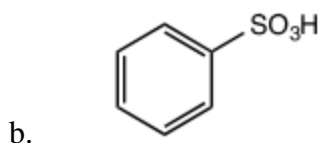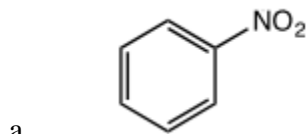   b. CH_3CHO
    c. CH_3NH_2

8. When the following equation is balanced and written with the smallest whole number coefficients, what is the coefficient of O_2?

$$C_5H_{10}O_5 + x\ O_2 \rightarrow y\ CO_2 + z\ H_2O$$

    a. 2
    b. 3
    c. 5

9. What is the product of the reaction of benzene with a solution of nitric acid in sulfuric acid at 50 °C?

a.

b.

c.
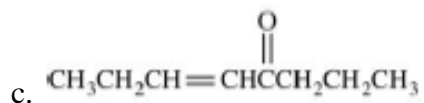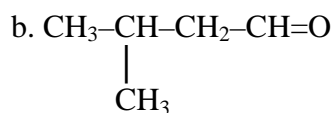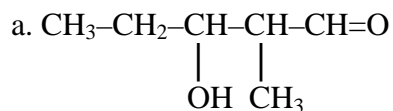
10. The amount of glucose (M = 180 g/mol) required to prepare 250 mL solution of 0.1 M concentration is:

    a. 180 mg;
    b. 9 g;
    c. 4.5 g.

11. Indicate which of the following biopolymers are composed of many amino acid residues:

    a. polynucleotides;
    b. polysaccharides;
    c. polypeptides.

12. Which of the following is the aldol condensation product of propanal CH_3CH_2CHO?

a. $CH_3-CH_2-CH-CH-CH=O$
$\qquad\qquad\quad | \quad\ |$
$\qquad\qquad\ OH\ \ CH_3$

b. $CH_3-CH-CH_2-CH=O$
$\qquad\qquad |$
$\qquad\quad CH_3$

c.
$$CH_3CH_2CH=CHCCH_2CH_2CH_3$$
with $\overset{O}{\overset{||}{}}$ on the C

Realised by,

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The correct answers and scoring

 1. c   7.5 points
 2. a   7.5 points
 3. c   7.5 points
 4. c   7.5 points
 5. c   7.5 points
 6. a   7.5 points
 7. c   7.5 points
 8. c   7.5 points
 9. a   7.5 points
10. c   7.5 points
11. c   7.5 points
12. a   7.5 points

You will receive 10 points by default.

Total: 100 points