

MOCK FINAL EXAM

CHEM 101

2nd term

2017-1438

1- Which of the following is false about a neutron?

- A) It has a positive charge
- B) It is much more massive than an electron.
- C) It is often associated with protons.
- D) It is more difficult to detect than a proton or an electron.

2) Which of the following elements has an atomic number of 26?

- | | |
|-------|-------|
| A) K | C) Fe |
| B) Ca | D) Br |

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2) Which of the following elements has an atomic number of 26?

- A) K
- B) Ca
- C) Fe
- D) Br

3) What is the atomic symbol for sulfur?

A) S

C) Ag

B) Au

D) Si

4) Anions are formed when atoms

A) Gain of protons.

C) Gain of electrons.

B) Lose of neutrons.

D) Lose of electrons

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A) 7

C) 12

B) 8

D) 15

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7. The correct name for Mg_2N_3 is

A) Magnesium trinitride.

B) Manganese nitrate.

C) Magnesium nitrate.

D) Magnesium nitride.

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8. The correct name for CuNO_2

- A) Copper (II) nitrate.
- B) Copper (I) nitrate.
- C) Copper (I) nitrite.
- D) Copper (II) nitrate.

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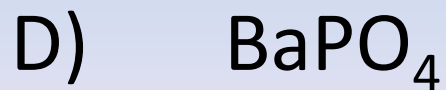
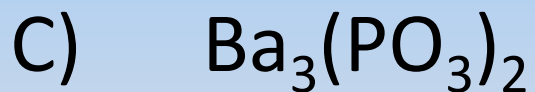
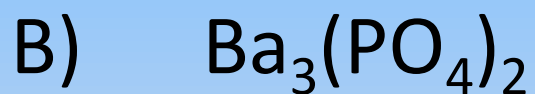
A) Copper (II) nitrate.

B) Copper (I) nitrate.

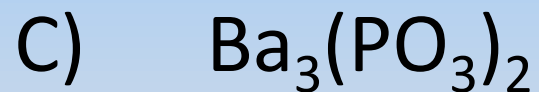
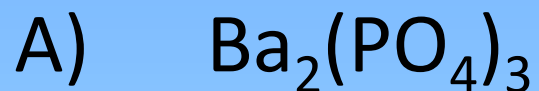
C) Copper (I) nitrite.

D) Copper (II) nitrate.

9. What is the formula for the ionic compound formed between barium and phosphate ions?



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10. How many moles of hydrogen atoms are there in 1.87 moles of C_8H_{18} ?

- A) 15.0 mol
- B) 9.0×10^{24} mol
- C) 33.7 mol
- D) 1.87 mol

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11. A double bond consists ofpairs of electrons shared between two atoms.

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B) 2

C) 3

D) 4

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- A) Number of protons
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- C) Number of neutrons
- D) Total number of protons and neutrons

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13) Who in 1909 showed the charge on the electron, by oil drop experiment?

A) Ernest Rutherford.

C) Niels Bohr.

B) John Dalton.

D) Robert A. Millikan.

14) The electron configuration of Ne is:

A) $1s^2 2s^2 2p^5$

C) $1s^2 2s^2 2p^6 3s^2 3p^6 4s^2$

B) $1s^2 2s^2 2p^6$

D) $1s^2 2s^2 2p^3$

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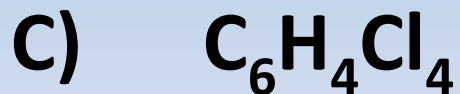
16) The chemical formula for iron(II) oxide is:



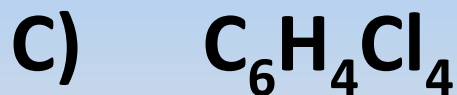
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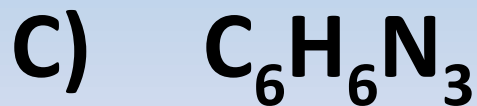
17. The empirical formula of a compound is C_2HCl and its molar mass is 181.44 g/mol . What is the molecular formula of the compound?



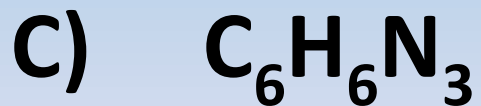
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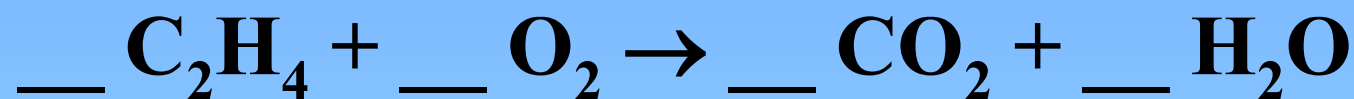
18. Compound contains 74.03% C, 8.70% H, and 17.27% N. What is the empirical formula of the compound?



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19. When balance the following equation, the coefficient of O_2 is



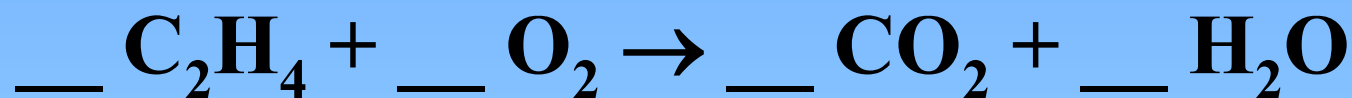
A) 1.

B) 2.

C) 3.

D) 4.

19. When balance the following equation, the coefficient of O_2 is



A) 1.

B) 2.

C) 3.

D) 4.

20- How would you describe the nucleus?

- A) Dense, positively charged
- B) Mostly empty space, positively charged
- C) Tiny, negatively charged
- D) Dense, negatively charged

21- Iodine is an example of a(n):

- A) noble Gas
- B) halogen
- C) alkali Metal
- D) alkaline Earth Metal

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22- Which one of the following elements is a poor conductor of heat and electricity?

A) copper

C) iron

B) fluorine

D) lead

23- How many grams are in a sample containing 2.71×10^{24} atoms of iron, atomic mass of Iron is 55.846 g/mol?

A) 160.22

C) 449.94

B) 251.33

D) 292.27

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A) 160.22

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D) 292.27

24- Which one of the following species has the same electron configuration as the Al^{3+} cation?

- A) S^{2-} .
- B) Cl^- .
- C) F .
- D) Na^+ .

25) In a chemical bond, the polarity of it can be specified by:

- A) electron affinity
- B) electronegativity
- C) ionization energy
- D) metallic character

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26. A covalent bond between the same two atoms is the longest.

A) single

B) double

C) triple

D) strong

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27) The resulting bond due to transfer of electron is:

- A) covalent
- B) polar covalent
- C) ionic
- D) metallic

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B) polar covalent

C) ionic

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28) The resulting bond due to sharing of electron is:

- A) covalent
- B) polar covalent
- C) ionic
- D) metallic

29) Substance that produces H^+ ion is called:

- A) acid
- B) base
- C) solution
- D) antacid

30) Substance that produces OH^- ion is called:

- A) acid
- B) base
- C) solution
- D) antacid

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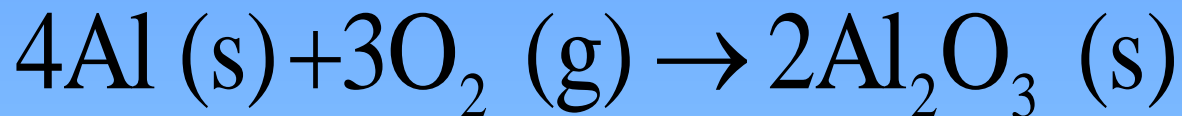
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- A) acid
- B) base
- C) solution
- D) antacid

31. Consider the following reaction:



If the reaction of 2.5 g of Al with 2.5 g of O_2 produced 3.5 g of Al_2O_3 . The % yield of the reaction is

A) 74 %

B) 37 %

C) 47 %

D) 66 %

31. Consider the following reaction:



If the reaction of 2.5 g of Al with 2.5 g of O₂ produced 3.5 g of Al₂O₃. The % yield of the reaction is

A) 74 %

B) 37 %

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32- According to the following balanced reaction, what is the oxidation state of the Fe?



- A) 0
- B) +1
- C) +2
- D) +3

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33. How many grams of sodium are there in 8.5 g of Na_3PO_4 ?

A) 2.8 g

B) 1.2 g

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34) What is the molarity of a solution containing 5.00 moles of KCl in 2.00 L of solution?

A) 2.50 M

B) 1.00 M

C) 5.00 M

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35. To what volume (ml) should you dilute 50.0 ml of a 12 M stock HNO_3 solution to obtain a 0.10 M HNO_3 solution

A) 416 ml

B) 6000 ml

C) 3000 ml

D) 2.4 ml

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36) Which of the following is the weak acid?

A) HNO_3

B) HBr

C) H_2CO_3

D) HCl

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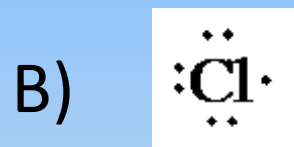
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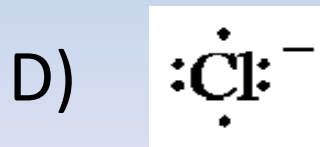
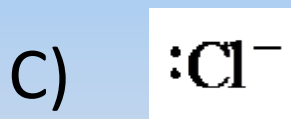
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38. Which of these atom is the *most* electronegative?

A) Li

B) Cs

C) P

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39) What is the $[\text{OH}^-]$ in a solution that has a $[\text{H}_3\text{O}^+] = 1.0 \times 10^{-3} \text{ M}$?

A) $1.0 \times 10^{-3} \text{ M}$

B) $1.0 \times 10^{-6} \text{ M}$

C) $1.0 \times 10^{-8} \text{ M}$

D) $1.0 \times 10^{-11} \text{ M}$

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40) Express the equilibrium constant for the following reaction.



A) $K = \frac{[\text{CH}_2\text{Cl}_2][\text{H}_2]}{[\text{CH}_3\text{Cl}][\text{Cl}_2]}$	C) $K = \frac{[\text{CH}_3\text{Cl}]^{16}[\text{Cl}_2]^8}{[\text{CH}_2\text{Cl}_2]^{16}[\text{H}_2]^8}$
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41) For the reaction of carbon with carbon dioxide to make carbon monoxide, the reaction is as follows. Write the form of the K_c .



A) $K_c = \frac{[\text{CO}]}{[\text{CO}_2]}$	C) $K_c = \frac{[\text{CO}]^2}{[\text{CO}_2]}$
B) $K_c = \frac{[2\text{CO}]^2}{[\text{CO}_2]}$	D) $K_c = \frac{[\text{CO}]^2}{[\text{C}] [\text{CO}_2]}$

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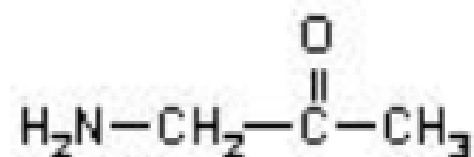


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43) What functional group(s) are present in the following compound?

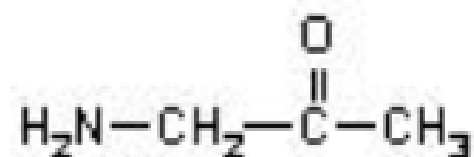


- A) amine
- B) amide
- C) ketone
- D) amine and ketone
- E) amine and carboxylic acid

44) The names of compounds with carbon-carbon triple bonds contain the suffix ____.

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- B) -ene
- C) -yne
- D) -one

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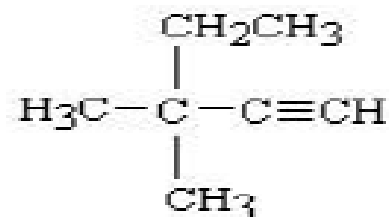


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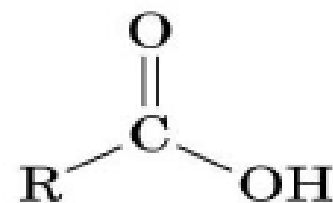
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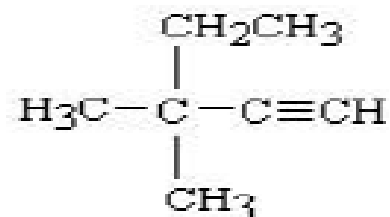
- A) *tert*-butylethyne
- B) 3, 3-dimethyl-1-pentyne
- C) 3-ethyl-3-methyl-1-butyne
- D) *trans*-ethylmethylbutyne

46- What is the name of compound shown to the right ?

- | | |
|--|--|
| <ul style="list-style-type: none">(a) Alkanes(b) Alkenes(c) Alkynes(d) Carboxylic acids | $\begin{array}{c} \text{O} \\ \\ \text{R}-\text{C}-\text{OH} \end{array}$ |
|--|--|



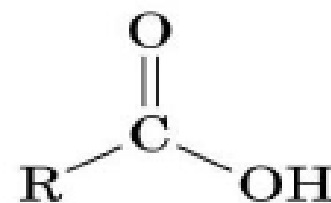
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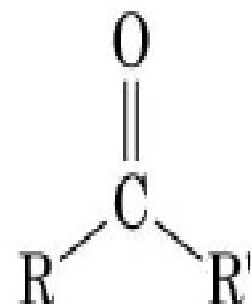
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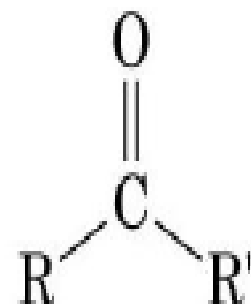
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<p>(a) Alkanes (b) Alkenes (c) Alkynes (d) Ketone</p>	 <p>The diagram shows a central carbon atom (C) with a double bond to an oxygen atom (O) positioned above it. Two single bonds extend from the carbon atom to the left and right, connecting to groups labeled R and R' respectively.</p>
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48- Hydrochloric acid (HCl) is a:

- (a) strong acid
- (b) weak base
- (c) weak acid
- (d) strong base

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49) Which of the following will not be found in DNA?

- A) adenine
- B) thymine
- C) guanine
- D) cytosine
- E) ribose

50) Amino acids that are not synthesized in the body and must be obtained from the diet are called

- A) Non-essential.
- B) essential.
- C) polar.
- D) nonpolar.

51) The peptide bonds that link amino acids in a protein are

- A) ester bonds.
- B) ether bonds.
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- A) cholesterol.
- B) oil.
- C) fat.
- D) glycerol

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- B) disaccharide.
- C) trisaccharide.
- D) polysaccharide.

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اللهم لا سهل الا ما جعلته سهلا
وانت تجعل الحزن اذا شئت سهلا

مع أطيب
الأمنيات لطلابنا

بالتوفيق والبركات

