Chemistry 115 Name

Dr. Cary Willard

Quiz 5a (20 points) March 13, 2013

All work must be shown to receive credit. Give answers to the correct number of significant figures. Avogadro’s number = 6.022 x 1023/mol

1. (6 points)Calculate the empirical formula of a compound composed of 28.46% Cu and 71.56% Br.
2. (4 points) Determine the molecular formula of a compound with an empirical formula CH2N and a molar mass of 84 g/mol.
3. (2 points) What is the purpose of balancing chemical equations?

To satisfy the law of conservation of mass.

1. (2 points) Give an example of the type of evidence that would lead a chemist to conclude that a chemical reaction had taken place.

A color change, a precipitate formation, a gas formation, or a change in temperature

1. (6 points) Balance the chemical reactions below:
   1. CaCl2 + K3PO4 🡪 Ca3(PO4)2 + KCl

3 CaCl2 + 2 K3PO4 🡪 Ca3(PO4)2 + 6 KCl

* 1. C4H10 + O2 🡪 CO2 + H2O

2 C4H10 + 13 O2 🡪 8 CO2 + 10 H2O

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Quiz 5b (20 points) March 13, 2013

All work must be shown to receive credit. Give answers to the correct number of significant figures. Avogadro’s number = 6.022 x 1023/mol

1. (6 points)Calculate the empirical formula of a compound composed of 12.39% Mn and 87.39% I.
2. (4 points) Determine the molecular formula of a compound with an empirical formula CH2N and a molar mass of 140 g/mol.
3. (2 points) What is the purpose of balancing chemical equations?

To satisfy the law of conservation of mass.

1. (2 points) Give an example of the type of evidence that would lead a chemist to conclude that a chemical reaction had taken place.

A color change, a precipitate formation, a gas formation, or a change in temperature

1. (6 points) Balance the chemical reactions below:
   1. NiBr3 + Na2CO3 🡪 Ni2(CO3)3 + NaBr

2 NiBr3 + 3 Na2CO3 🡪 Ni2(CO3)3 + 6 NaBr

* 1. C6H14 + O2 🡪 CO2 + H2O

2 C6H14 + 19 O2 🡪 12 CO2 + 14 H2O

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Quiz 5c (20 points) March 13, 2013

All work must be shown to receive credit. Give answers to the correct number of significant figures. Avogadro’s number = 6.022 x 1023/mol

1. (6 points)Calculate the empirical formula of a compound composed of 32.84% Cr and 67.16% Cl.
2. (4 points) Determine the molecular formula of a compound with an empirical formula CH2N and a molar mass of 112 g/mol.
3. (2 points) What is the purpose of balancing chemical equations?

To satisfy the law of conservation of mass.

1. (2 points) Give an example of the type of evidence that would lead a chemist to conclude that a chemical reaction had taken place.

A color change, a precipitate formation, a gas formation, or a change in temperature

1. (6 points) Balance the chemical reactions below:
   1. CaCl2 + K3PO4 🡪 Ca3(PO4)2 + KCl

3 CaCl2 + 2 K3PO4 🡪 Ca3(PO4)2 + 6 KCl

* 1. C4H10 + O2 🡪 CO2 + H2O

2 C4H10 + 13 O2 🡪 8 CO2 + 10 H2O

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Quiz 5d (20 points) March 13, 2013

All work must be shown to receive credit. Give answers to the correct number of significant figures. Avogadro’s number = 6.022 x 1023/mol

1. (6 points)Calculate the empirical formula of a compound composed of 23.05% Ti and 76.95% Br.
2. (4 points) Determine the molecular formula of a compound with an empirical formula CH2N and a molar mass of 168 g/mol.
3. (2 points) What is the purpose of balancing chemical equations?

To satisfy the law of conservation of mass.

1. (2 points) Give an example of the type of evidence that would lead a chemist to conclude that a chemical reaction had taken place.

A color change, a precipitate formation, a gas formation, or a change in temperature

1. (6 points) Balance the chemical reactions below:
2. NiBr3 + Na2CO3 🡪 Ni2(CO3)3 + NaBr

2 NiBr3 + 3 Na2CO3 🡪 Ni2(CO3)3 + 6 NaBr

1. C6H14 + O2 🡪 CO2 + H2O

2 C6H14 + 19 O2 🡪 12 CO2 + 14 H2O