Chemistry 115 Name key

Dr. Cary Willard

Quiz 2a (20 points) February 8, 2011

All work must be shown to receive credit. Use dimensional analysis for calculated problems.

1. (4 points) Write the name and symbol of an element that fits the following criteria
	1. A nobel gas

Name neon Symbol Ne

* 1. A transition metal

Name copper Symbol Cu

1. (4 points) Identify each of the following as a physical or chemical change.
	1. An iron pipe breaking

Physical change

* 1. Lactic acid reacting with methanol to form methyl lactate.

Chemical change

1. (4 points)For an atom of nickel with 31 neutrons determine the following
	1. The number of protons in the atom

28

* 1. The mass number of the atom

Mass number = 28 protons + 31 neutrons = 59

* 1. The elemental symbol for this element (isotopic symbol)

59Ni

1. (4 points) How many liters of olive oil contain 1.5 kg of olive oil? (density olive oil = 0.92 g/mL)

$$?L=1.5 kg oil×\frac{1000 g oil}{1 kg oil}×\frac{1 mL oil}{0.92 g oil}×\frac{1 L oil}{1000 mL oil}=1.6 L oil$$

1. (4 points) How many miles will light travel in 3.0 minutes if light travels at the rate of 3.00 x 108 m/sec? (1 mile = 5280 ft)

$$?mi=3.0 min×\frac{60 sec}{1 min}×\frac{3.00×10^{8}m}{1 sec}×\frac{100 cm}{1 m}×\frac{1 in}{2.54 cm}×\frac{1 ft}{12 in}×\frac{1 mi}{5280 ft}=3.4×10^{7}mi$$

Chemistry 115 Name key

Dr. Cary Willard

Quiz 2b (20 points) February 8, 2011

All work must be shown to receive credit. Use dimensional analysis for calculated problems.

1. (4 points) Write the name and symbol of an element that fits the following criteria
	1. A halogen

Name bromine Symbol Br

* 1. A transition metal

Name manganese Symbol Mn

1. (4 points) Identify each of the following as a physical or chemical change.
	1. Ammonia reacting with vinegar to form acetamide.

Chemical change

* 1. A chunk of glass melting

Physical change

1. (4 points)For an atom of zinc with 35 neutrons determine the following
	1. The number of protons in the atom

30

* 1. The mass number of the atom

Mass number = 30 protons + 35 neutrons =65

* 1. The elemental symbol for this element (isotopic symbol)

65Zn

1. (4 points) How many liters of olive oil contain 2.5 kg of olive oil? (density olive oil = 0.92 g/mL)

$$?L=2.5 kg oil×\frac{1000 g oil}{1 kg oil}×\frac{1 mL oil}{0.92 g oil}×\frac{1 L oil}{1000 mL oil}=L oil$$

1. (4 points) How many miles will light travel in 2.0 minutes if light travels at the rate of 3.00 x 108 m/sec? (1 mile = 5280 ft)

$$?mi=2.0 min×\frac{60 sec}{1 min}×\frac{3.00×10^{8}m}{1 sec}×\frac{100 cm}{1 m}×\frac{1 in}{2.54 cm}×\frac{1 ft}{12 in}×\frac{1 mi}{5280 ft}=2.2×10^{7}mi$$

Chemistry 115 Name key

Dr. Cary Willard

Quiz 2c (20 points) February 10, 2011

All work must be shown to receive credit. Use dimensional analysis for calculated problems.

1. (4 points) Write the name and symbol of an element that fits the following criteria
	1. An alkaline earth

Name calcium Symbol Ca

* 1. An inner transition metal

Name uranium Symbol U

1. (4 points) Identify each of the following as a physical or chemical property.
	1. Calcium carbonate is a white powder.

Physical property

* 1. Phosphorus will ignite when exposed to air

Chemical property

1. (4 points)For an atom of chromium with 31 neutrons determine the following
	1. The number of protons in the atom

24

* 1. The mass number of the atom

Mass number = 24 protons + 31 neutrons =55

* 1. The elemental symbol for this element (isotopic symbol)

55Cr

1. (4 points) What is the mass in kg of 2.5 L of olive oil? (density olive oil = 0.92 g/mL)

$$?kg oil=2.5 L oil×\frac{1000 mL oil}{1 L oil}×\frac{0.92 g oil}{1 mL oil}×\frac{1 kg oil}{1000 g oil}=2.3 kg oil$$

1. (4 points) How many minutes will it take light to travel 5.0 billion miles (5.0 x 109 miles) if light travels at the rate of 3.00 x 108 m/sec? (1 mile = 5280 ft)

$$?year=5.0×10^{9}mi ×\frac{5290 ft}{1 mi}×\frac{12 in}{1 ft}×\frac{2.54 cm}{1 in}×\frac{1 m}{100 cm}×\frac{1 sec}{3.00×10^{8}m}×\frac{1 min}{60 sec}=450 min$$

Chemistry 115 Name key

Dr. Cary Willard

Quiz 2d (20 points) February 10, 2011

All work must be shown to receive credit. Use dimensional analysis for calculated problems.

1. (4 points) Write the name and symbol of an element that fits the following criteria
	1. A noble gas

Name xenon Symbol Xe

* 1. An inner transition metal

Name plutonium Symbol Pu

1. (4 points) Identify each of the following as a physical or chemical property.
	1. Fluorine gas will explode in the presence of hydrogen.

Chemical property

* 1. Neon is a colorless gas at room temperature

Physical property

1. (4 points)For an atom of chlorine with 22 neutrons determine the following
	1. The number of protons in the atom

17

* 1. The mass number of the atom

Mass number = 17 protons + 22 neutrons =39

* 1. The elemental symbol for this element (isotopic symbol)

39Cl

1. (4 points) What is the mass in kg of 1.5 L of olive oil? (density olive oil = 0.92 g/mL)

$$?kg oil=1.5 L oil×\frac{1000 mL oil}{1 L oil}×\frac{0.92 g oil}{1 mL oil}×\frac{1 kg oil}{1000 g oil}=kg oil$$

1. (4 points) How many minutes will it take light to travel 6.0 billion miles (6.0 x 109 miles) if light travels at the rate of 3.00 x 108 m/sec? (1 mile = 5280 ft)

$$?year=6.0×10^{9}mi ×\frac{5290 ft}{1 mi}×\frac{12 in}{1 ft}×\frac{2.54 cm}{1 in}×\frac{1 m}{100 cm}×\frac{1 sec}{3.00×10^{8}m}×\frac{1 min}{60 sec}=540 min$$