Chemistry 115 Name

Dr. Cary Willard

Quiz 8a (20 points) April 7, 2011

All work must be shown to receive credit. 1 atm = 760 mmHg = 760 torr = 14.7 psi = 101 kPa

1. (6 points) Draw all reasonable resonance structures of NO3-1.



1. (3 points) How do ionic bonds differ from covalent bonds?

Ionic bonds are characterized by electrostatic interactions and covalent bonds are shared electron bonds.

1. (4 points) Identify the more electronegative of the elements in each pair below and circle it.
	1. Boron or Nitrogen
	2. Carbon or Tin
2. (4 points) What is a polar covalent bond?

A polar covalent bond is a bond that has a positive and a negative end.

1. (3 points) If the barometric pressure on a certain day is 736 torr, what is the pressure in atmospheres?

$$?atm=736 torr×\frac{1 atm}{760 torr}=0.968 atm$$

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Quiz 8b (20 points) April 7, 2011

All work must be shown to receive credit. 1 atm = 760 mmHg = 760 torr = 14.7 psi = 101 kPa

1. (6 points) Draw all reasonable resonance structures of NO2-1.



1. (3 points) How do ionic bonds differ from covalent bonds?

Ionic bonds are characterized by electrostatic interactions and covalent bonds are shared electron bonds.

1. (4 points) Identify the more electronegative of the elements in each pair below and circle it.
	1. Sulfur or Oxygen
	2. Potassium or Bromine
2. (4 points) What is a polar covalent bond?

A polar covalent bond is a bond that has a positive and a negative end.

1. (3 points) If the barometric pressure on a certain day is 718 torr, what is the pressure in atmospheres?

$$?atm=718 torr×\frac{1 atm}{760 torr}=0.945 atm$$

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Quiz 8c (20 points) April 12, 2011

All work must be shown to receive credit. 1 atm = 760 mmHg = 760 torr = 14.7 psi = 101 kPa

1. (6 points) Draw all reasonable resonance structures of NO3-1.



1. (3 points) What are intermolecular forces?

Intermolecular forces are the attractive forces that hold one molecule close to another.

1. (4 points) Identify the more polarizable of the elements in each pair below and circle it.
	1. Sulfur or Iodine
	2. Potassium or Bromine
2. (3 points) If the barometric pressure on a certain day is 0.929 atm, what is the pressure in mmHg?

$$?atm=0.929 atm×\frac{760 torr}{1 atm}=706 torr$$

1. (4 points) A sample of gas has an initial volume of 6.2 L at a pressure of 725 mm Hg. If the volume of the gas is increased to 7.2 L, what will the pressure be? (Assume constant temperature.)

$$P\_{1}V\_{1}=P\_{2}V\_{2}$$

$$P\_{2}=P\_{1}\left(\frac{V\_{1}}{V\_{2}}\right)=725 mm Hg\left(\frac{6.2 L}{7.2 L}\right)=620 mm Hg$$

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Quiz 8d (20 points) April 12, 2011

All work must be shown to receive credit. 1 atm = 760 mmHg = 760 torr = 14.7 psi = 101 kPa

1. (6 points) Draw all reasonable resonance structures of CO3-2.



1. (3 points) What are intermolecular forces?

Intermolecular forces are the attractive forces that hold one molecule close to another.

1. (4 points) Identify the more polarizable of the elements in each pair below and circle it.
	1. Phosphorus or Bismuth
	2. Silicon or Xenon
2. (3 points) If the barometric pressure on a certain day is 0.832 atm, what is the pressure in mmHg?

$$?atm=0.832 atm×\frac{760 torr}{1 atm}=632 torr$$

1. (4 points) A sample of gas has an initial volume of 3.2 L at a pressure of 725 mm Hg. If the volume of the gas is increased to 5.2 L, what will the pressure be? (Assume constant temperature.)

$$P\_{1}V\_{1}=P\_{2}V\_{2}$$

$$P\_{2}=P\_{1}\left(\frac{V\_{1}}{V\_{2}}\right)=725 mm Hg\left(\frac{3.2 L}{5.2 L}\right)=450 mm Hg$$