Posting ID: 423347
Course: CHE 105 2015 SU
Instructor: Sarah Edwards

Question #: 1

How many grams of NH_4OH (ammonium hydroxide) are in 3.47 moles of NH_4OH?

__1__ grams

1. _____

Question #: 2

When 2.61 grams of Na react with 5.74 grams of Cl_2 according to the following equation,

$$2\ Na(s) + Cl_2(g) \rightarrow 2\ NaCl(s)$$

what is the maximum amount of NaCl formed?

A. 6.63 g
B. 9.46 g
C. 4.73 g
D. 8.35 g

Question #: 3

When 7.32 g of propane (C_3H_8, 44.10 g/mol) reacts with excess O_2 (32.00 g/mol) according to the reaction

$$C_3H_8(g) + 5\ O_2(g) \rightarrow 3\ CO_2(g) + 4\ H_2O(g)$$

to produce 9.68 g of water (H_2O, 18.02 g/mol), what is the percent yield of H_2O?

__1__ %

1. _____

Question #: 4

What is the molarity of a solution prepared by dissolving 5.68 g of sucrose (molar mass = 342.3 g/mol) in enough water to make 22.2 mL of the solution?

A. 8.87×10^{-4} M
B. 0.747 M
C. 0.304 M
D. 0.899 M

Question #: 5

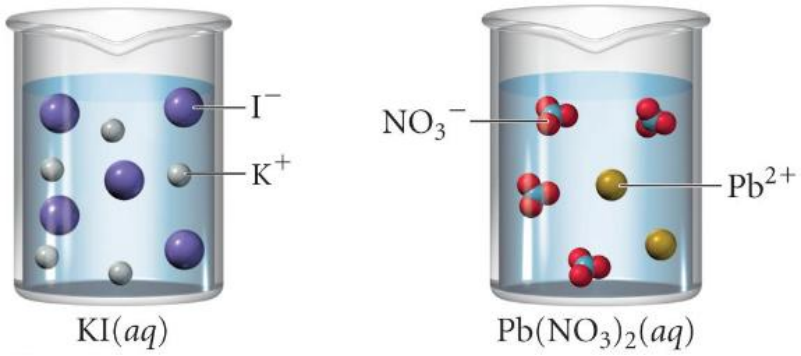
If 17.76 mL of 1.492 M LiCl solution is diluted to 100.0 mL, what is the final concentration of LiCl?

__1__ M

1. _____

Question #: 6

What similarity(ies) between KI and $Pb(NO_3)_2$ is(are) illustrated by this figure?
Select all that apply.



A. They are both insoluble in water.
B. They are both acids.
C. They are both soluble in water.
D. They are both strong electrolytes.

Question #: 7

Which one of the following compounds is **most soluble** in water?

A. $PbCl_2$
B. $NaNO_3$
C. $SrSO_4$
D. $Mg(OH)_2$

Question #: 8

Which of the following is a **nonelectrolyte** when dissolved in water?

A. $HC_2H_3O_2$ (acetic acid)
B. NaCl
C. HCl
D. $C_2H_6O_2$ (ethylene glycol)

Question #: 9

What is the **net ionic equation** for the reaction of aqueous solutions of silver nitrate and potassium iodide?

A. $Ag^+(aq) + I^-(aq) \rightarrow AgI(s)$
B. $K^+(aq) + NO_3^-(aq) \rightarrow KNO_3(aq)$
C. $AgNO_3(aq) + KI(aq) \rightarrow KNO_3(aq) + AgI(s)$
D. $K^+(aq) + NO_3^-(aq) \rightarrow KNO_3(s)$

Question #: 10

What volume of 3.62 M NaOH is required to neutralize 2.41 mL of 1.89 M H_2SO_4?

__1__ mL

1. _____

Question #: 11

What is the **balanced molecular equation** for the reaction of phosphoric acid with sodium bicarbonate?

A. $H_3PO_4(aq) + 3\ NaHCO_3(aq) \rightarrow 3\ H_2CO_3(g) + Na_3PO_4(s)$
B. $H_3PO_4(aq) + 3\ NaHCO_3(aq) \rightarrow 3\ H_2O(l) + 3\ CO_2(g) + Na_3PO_4(aq)$
C. $H_3PO_4(aq) + NaHCO_3(aq) \rightarrow H_3CO_3(g) + NaPO_4(aq)$
D. $H^+(aq) + OH^-(aq) \rightarrow H_2O(l)$

Question #: 12

Which species is **oxidized** in this reaction?
$4\ Al(s) + 3\ O_2(g) \rightarrow 2\ Al_2O_3(s)$

A. $Al(s)$
B. $O_2(g)$
C. $Al_2O_3(s)$
D. $O(g)$

Question #: 13

What is the oxidation state of phosphorus in H_3PO_4?

A. +1
B. −2
C. +5
D. −3

Question #: 14

1673 mmHg = __1__ atm

1. _____

Question #: 15

A 2.61 L sample of gas at 31.2 °C is heated to 76.3 °C at constant pressure.
What is the final volume of the gas?

A. 2.61 L
B. 6.38 L
C. 3.00 L
D. 2.27 L

Question #: 16

If 2.56 moles of H_2 occupy 4.78 L, how many moles of H_2 occupy 1.65 L at the same temperature and pressure?

__1__ mol H_2

1. _____

Question #: 17

4.16 mol of N_2 in a 2.86 L rigid container are heated to 348 K.
What is the final pressure of the gas?

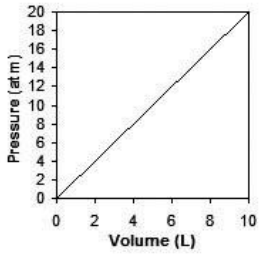
__1__ atm

1. _____

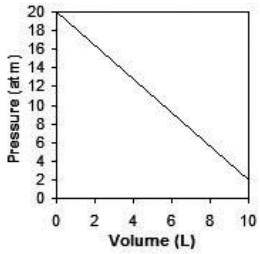
Question #: 18

Which of the following graphs shows ideal gas behavior for a fixed number of moles of gas at constant temperature?

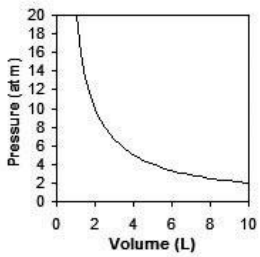
A



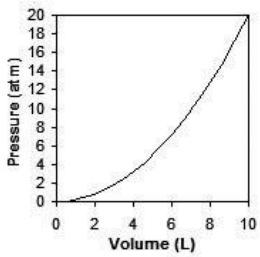
C



B



D



A. A
B. B
C. C
D. D

Attachment:

attachment_for_itemid_589.PNG

Question #: 19

A 1.67 L container is filled with helium at 25 °C to a pressure of 7.81 atm.
What is the mass of the helium in this container?

A. 4.00 g
B. 2.13 g
C. 3.86 g
D. 1.28 g

Question #: 20

The partial pressure of a gas in a mixture is

A. the total pressure of the mixture multiplied by the mole fraction of the gas.

B. always highest for a noble gas.
C. moles of the gas divided by the total pressure of the mixture.
D. the same for all components of the mixture, regardless of mole fraction.

Question #: 21

If 2.33 L of propane (C_3H_8, 44.10 g/mol) reacts with excess oxygen (O_2, 32.00 g/mol) at STP acording to the reaction below, how many moles of carbon dioxide (CO_2, 44.01 g/mol) are produced?

$$C_3H_8(g) + 5\ O_2(g) \rightarrow 3\ CO_{2(g)} + 4\ H_2O(g)$$

__1__ mol CO_2

1. _____

Question #: 22

Which of the following statements is a postulate of kinetic molecular theory?

A. The size of a gas particle is negligibly small.
B. The average kinetic energy of a gas particle is inversely proportional to the temperature in Kelvins.
C. Gas particles do not collide with each other.
D. All gas molecules are attracted to each other.

Question #: 23

A mixture of helium, neon, and argon is at 298 K.

Atoms of which gas have the highest root mean square velocity (u_{rms})? __1__

1. _____

Question #: 24

Gases behave **most** ideally at __1__ [high or low] temperature and __2__ [high or low] pressure.

1. _____
2. _____

Question #: 25

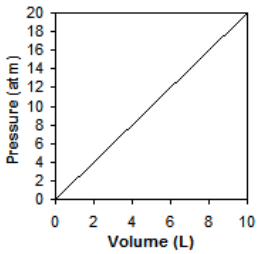
1.60 g of H_2 (2.02 g/mol) reacts with 19.4 g of O_2 (32.00 g/mol) in a rigid 5.50 L vessel at 298 K according to the following equation:

$$2\ H_2(g) + O_2(g) \rightarrow 2\ H_2O(g)$$

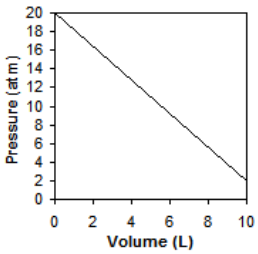
What is the final pressure of the system? __1__ atm

1. _____

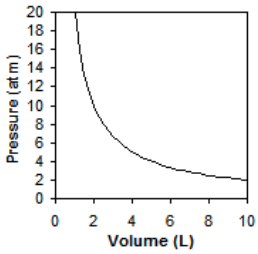
A



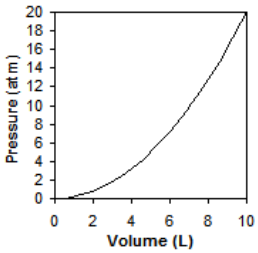
C



B



D



attachment_for_itemid_589.PNG

Posting ID: 423347
Course: CHE 105 2015 SU
Instructor: Sarah Edwards

Question #: 1

How many grams of NH_4OH (ammonium hydroxide) are in 3.47 moles of NH_4OH?

__1__ grams

1. 122

Question #: 2

When 2.61 grams of Na react with 5.74 grams of Cl_2 according to the following equation,

$$2\ Na(s) + Cl_2(g) \rightarrow 2\ NaCl(s)$$

what is the maximum amount of NaCl formed?

✓A. 6.63 g
B. 9.46 g
C. 4.73 g
D. 8.35 g

Question #: 3

When 7.32 g of propane (C_3H_8, 44.10 g/mol) reacts with excess O_2 (32.00 g/mol) according to the reaction

$$C_3H_8(g) + 5\ O_2(g) \rightarrow 3\ CO_2(g) + 4\ H_2O(g)$$

to produce 9.68 g of water (H_2O, 18.02 g/mol), what is the percent yield of H_2O?

__1__ %

1. 80.9

Question #: 4

What is the molarity of a solution prepared by dissolving 5.68 g of sucrose (molar mass = 342.3 g/mol) in enough water to make 22.2 mL of the solution?

A. 8.87×10^{-4} M
✓B. 0.747 M
C. 0.304 M
D. 0.899 M

Question #: 5

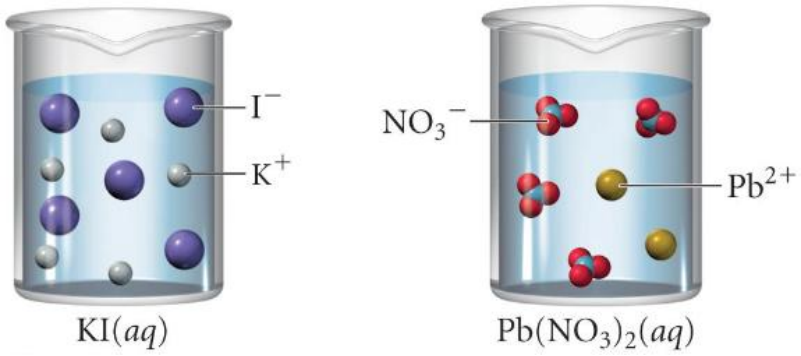
If 17.76 mL of 1.492 M LiCl solution is diluted to 100.0 mL, what is the final concentration of LiCl?

__1__ M

1. 0.2650

Question #: 6

What similarity(ies) between KI and $Pb(NO_3)_2$ is(are) illustrated by this figure?
Select all that apply.



A. They are both insoluble in water.
B. They are both acids.
✓C. They are both soluble in water.
✓D. They are both strong electrolytes.

Question #: 7

Which one of the following compounds is **most soluble** in water?

A. $PbCl_2$
✓B. $NaNO_3$
C. $SrSO_4$
D. $Mg(OH)_2$

Question #: 8

Which of the following is a **nonelectrolyte** when dissolved in water?

A. $HC_2H_3O_2$ (acetic acid)
B. NaCl
C. HCl
✓D. $C_2H_6O_2$ (ethylene glycol)

Question #: 9

What is the **net ionic equation** for the reaction of aqueous solutions of silver nitrate and potassium iodide?

✓A. $Ag^+(aq) + I^-(aq) \rightarrow AgI(s)$
B. $K^+(aq) + NO_3^-(aq) \rightarrow KNO_3(aq)$
C. $AgNO_3(aq) + KI(aq) \rightarrow KNO_3(aq) + AgI(s)$
D. $K^+(aq) + NO_3^-(aq) \rightarrow KNO_3(s)$

Question #: 10

What volume of 3.62 M NaOH is required to neutralize 2.41 mL of 1.89 M H_2SO_4?

__1__ mL

1. 2.52

Question #: 11

What is the **balanced molecular equation** for the reaction of phosphoric acid with sodium bicarbonate?

A. $H_3PO_4(aq) + 3\ NaHCO_3(aq) \rightarrow 3\ H_2CO_3(g) + Na_3PO_4(s)$
✓B. $H_3PO_4(aq) + 3\ NaHCO_3(aq) \rightarrow 3\ H_2O(l) + 3\ CO_2(g) + Na_3PO_4(aq)$
C. $H_3PO_4(aq) + NaHCO_3(aq) \rightarrow H_3CO_3(g) + NaPO_4(aq)$
D. $H^+(aq) + OH^-(aq) \rightarrow H_2O(l)$

Question #: 12

Which species is **oxidized** in this reaction?

$4\ Al(s) + 3\ O_2(g) \rightarrow 2\ Al_2O_3(s)$

✓A. $Al(s)$
B. $O_2(g)$
C. $Al_2O_3(s)$
D. $O(g)$

Question #: 13

What is the oxidation state of phosphorus in H_3PO_4?

A. +1
B. −2
✓C. +5
D. −3

Question #: 14

1673 mmHg = __1__ atm

1. 2.201

Question #: 15

A 2.61 L sample of gas at 31.2 °C is heated to 76.3 °C at constant pressure.
What is the final volume of the gas?

A. 2.61 L
B. 6.38 L
✓C. 3.00 L
D. 2.27 L

Question #: 16

If 2.56 moles of H_2 occupy 4.78 L, how many moles of H_2 occupy 1.65 L at the same temperature and pressure?

__1__ mol H_2

1. 0.884

Question #: 17

4.16 mol of N_2 in a 2.86 L rigid container are heated to 348 K.
What is the final pressure of the gas?

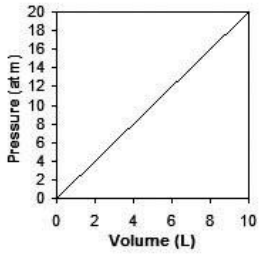
__1__ atm

1. 41.5|41.5 atm|41.5 atmospheres|

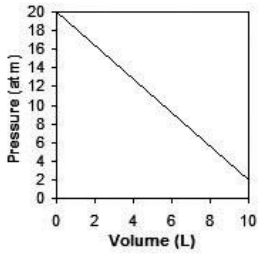
Question #: 18

Which of the following graphs shows ideal gas behavior for a fixed number of moles of gas at constant temperature?

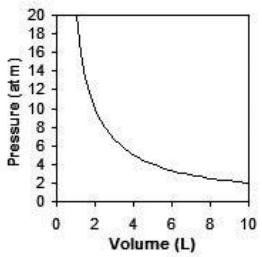
A



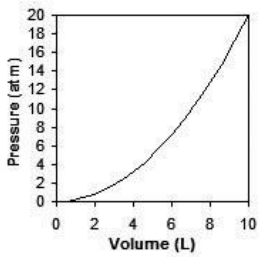
C



B



D



A. A
✓B. B
C. C
D. D

Attachment:

attachment_for_itemid_589.PNG

Question #: 19

A 1.67 L container is filled with helium at 25 °C to a pressure of 7.81 atm.
What is the mass of the helium in this container?

A. 4.00 g
✓B. 2.13 g
C. 3.86 g
D. 1.28 g

Question #: 20

The partial pressure of a gas in a mixture is

✓A. the total pressure of the mixture multiplied by the mole fraction of the gas.

B. always highest for a noble gas.
C. moles of the gas divided by the total pressure of the mixture.
D. the same for all components of the mixture, regardless of mole fraction.

Question #: 21

If 2.33 L of propane (C_3H_8, 44.10 g/mol) reacts with excess oxygen (O_2, 32.00 g/mol) at STP acording to the reaction below, how many moles of carbon dioxide (CO_2, 44.01 g/mol) are produced?

$$C_3H_8(g) + 5\ O_2(g) \rightarrow 3\ CO_{2(g)} + 4\ H_2O(g)$$

__1__ mol CO_2

1. 0.312|3.12 x 10^-1|3.12 E-1|3.12 e-1|3.12x10^-1|3.12E-1|3.12e-1|3.12 X 10^-1|3.12X10^-1|

Question #: 22

Which of the following statements is a postulate of kinetic molecular theory?

✓A. The size of a gas particle is negligibly small.
B. The average kinetic energy of a gas particle is inversely proportional to the temperature in Kelvins.
C. Gas particles do not collide with each other.
D. All gas molecules are attracted to each other.

Question #: 23

A mixture of helium, neon, and argon is at 298 K.
Atoms of which gas have the highest root mean square velocity (u_{rms})? __1__

1. helium|He|Helium|

Question #: 24

Gases behave **most** ideally at __1__ [high or low] temperature and __2__ [high or low] pressure.

1. high|High|hi|Hi|
2. low|Low|lo|Lo|

Question #: 25

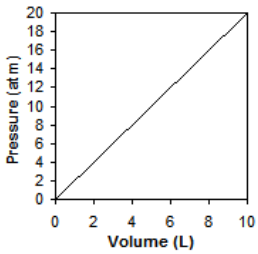
1.60 g of H_2 (2.02 g/mol) reacts with 19.4 g of O_2 (32.00 g/mol) in a rigid 5.50 L vessel at 298 K according to the following equation:

$$2\ H_2(g) + O_2(g) \rightarrow 2\ H_2O(g)$$

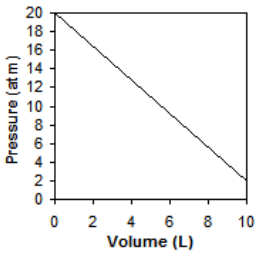
What is the final pressure of the system? __1__ atm

1. 4.46

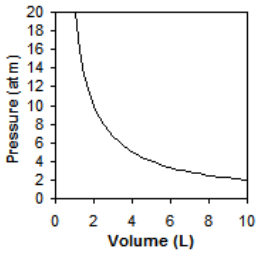
A



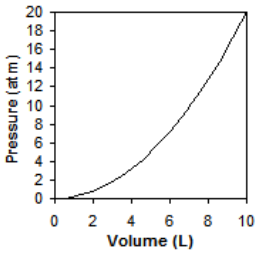
C



B



D



attachment_for_itemid_589.PNG