Launch External Tool

Time Elapsed: Hide Time

Attempt due: Mar 26 at 23:59

21 Minutes, 1 Second

Question 1

1 pts

How many moles in 5.38 g of $CaBr_2$? ***Answer to 4 decimal points.***

$MW(CaBr_2) = 199.88\ g.mol^{-1}$

Question 2

2 pts

How many grams of Ca^{2+} in 33.78 g of limestone ($CaCO_3$)? ***Answer to 2 decimal points***

$MW\ (Ca) = 40.08\ g.mol^{-1}$

$MW\ (CaCO_3) = 100.09\ g.mol^{-1}$

Question 3

1 pts

Question 3 — 1 pts

What's the molarity (M) of table sugar in a 250 mL cup of tea if 6.22 g of sugar was added? ***Answer to 4 decimal place.***

Table sugar = $C_{12}H_{22}O_{11}$ = 342.30 $g.mol^{-1}$

Question 4 — 2 pts

Calculate the mass (in g) of potassium permanganate ($KMnO_4$) required to make a 250 mL of a 0.546 M solution. ***Answer to 3 decimal places.***

$MW(KMnO_4)$ = 158.04 $g.mol^{-1}$

Question 5 — 1 pts

Question 5

1 pts

How many moles in 43.63 mL of liquid mercury (Hg)? ***Answer to 3 decimal places.***

$\rho_{(Hg)}$ = 13.534 $g.mL^{-1}$

MW(Hg) = 200.59 $g.mol^{-1}$

Question 6

2 pts

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2 pts

What is the mass (in grams) of carbon dioxide generated if 516 mL of ethanol is burnt in excess oxygen? ***Answer to 0 decimal points.***

$$CH_3CH_2OH + 3\,O_2 \rightarrow 2\,CO_2 + 3\,H_2O$$

ρ

(ethanol) = 0.789 $g.ml^{-1}$

MW (ethanol) = 46.068 $g.mol^{-1}$

MW (CO_2) = 44.01 $g.mol^{-1}$

Question 7

1 pts

How many moles of $O_{2(g)}$ are present in a 86 mL vessel at a pressure of 4 atm and at 471 °C? ***Provide***

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How many moles of $O_{2(g)}$ are present in a 86 mL vessel at a pressure of 4 atm and at 471 °C? ***Provide you answer to 4 decimal places.***

R = 0.08205 L·atm·mol^{-1}·K^{-1}

Question 8

2 pts

A car safety airbag inflates due to the rapid decomposition of sodium azide into sodium metal and nitrogen gas:

$$2\ NaN_{3(s)} \rightarrow 2\ Na_{(s)} + 3\ N_{2(g)}$$

How much sodium azide is needed (in g) to pack inside an airbag that needs to inflate to 40 L? You can assume the temperature is 25 °C. and pressure is 1 atm. ***Answer to zero decimal points.***

Ideal gas law: PV = nRT

R = 0.08205 L·atm/mol·K

MW(N_2) = 28.02 g.mol^{-1}

MW(NaN_3) = 65.02 g.mol^{-1}

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$MW(N_2) = 28.02\ g.mol^{-1}$

$MW(NaN_3) = 65.02\ g.mol^{-1}$