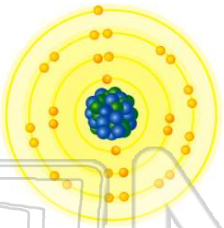
The Mole

CHEM

Name _____ Class _____ Date _____

1 Which sample contains a total of **9.0 x 10^{23}** atoms?



A 0.50 mole of HCl
B 0.75 mole of H_2O
C 1.5 moles of Cu
D 1.5 moles of H_2

2 Given the reaction:

$C_6H_{12}O_6(s) + 6O_2(g) \rightarrow 6CO_2(g) + 6H_2(l)$

How many moles of $C_6H_{12}O_6(s)$ are needed to produce **24 moles** of **carbon dioxide**?

A 1.0 mole
B 12 moles
C 24 moles
D 4.0 moles

3 A closed container holds 3.0 moles of CO_2 gas at STP. What is the total number of **moles** of Ne(g) that can be placed in a container of the **same size** at STP?

A 1.0 mole
B 1.5 moles

4 Given the balanced equation:

$3Fe^{3+}(aq) + Al(s) \rightarrow 3Fe^{2+}(aq) + Al^{3+}(aq)$

What is the total number of moles of electrons **lost** by 2 moles of Al(s)?

A 1 mole
B 6 moles

5

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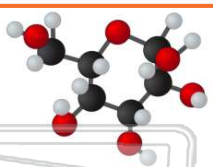
A 2.5
B 6.0
C 12
D 15



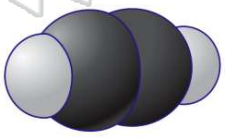
B 2.0 M
C 0.25 M
D 0.50 M

9 Given the equation:

$2C_2H_2(g) + 5O_2(g) \rightarrow 4CO_2(g) + 2H_2O(g)$

How many **moles of oxygen** are required to react completely with 1.0 mole of C_2H_2?

A 2.5
B 2.0
C 5.0
D 10



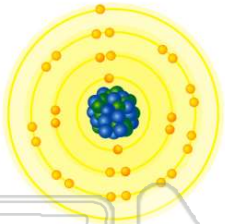
10 What is the **molarity** of a solution of NaOH if 2 liters of the solution contains 4 moles of NaOH?

A 0.5 M
B 2 M
C 8 M
D 80 M

ANSWER KEY

Which sample contains a total of **9.0 x 10^{23}** atoms?

A 0.50 mole of HCl
B 0.75 mole of H_2O
C 1.5 moles of Cu
D 1.5 moles of H_2



c

Given the reaction:

$C_6H_{12}O_6(s) + 6O_2(g) \rightarrow 6CO_2(g) + 6H_2(l)$

How many moles of $C_6H_{12}O_6(s)$ are needed to produce **24 moles** of **carbon dioxide**?

A 1.0 mole
B 12 moles
C 24 moles
D 4.0 moles

d

A closed container holds 3.0 moles of CO_2 gas at STP. What is the total number of **moles** of **Ne(g)** that can be placed in a container of the **same size** at STP?

A 1.0 mole
B 1.5 moles
C 3.0 moles

c

Given the balanced equation:

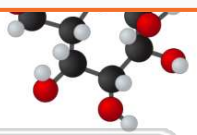
$3Fe^{3+}(aq) + Al(s) \rightarrow 3Fe^{2+}(aq) + Al^{3+}(aq)$

What is the total number of moles of electrons **lost** by 2 moles of Al(s)?

A 1 mole
B 6 moles
C 3 moles

b

B 6.0
C 12
D 15



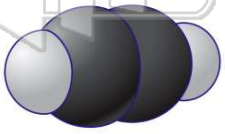
C 0.25 M
D 0.50 M

Given the equation:

$2C_2H_2(g) + 5O_2(g) \rightarrow 4CO_2(g) + 2H_2O(g)$

How many **moles of oxygen** are required to react completely with 1.0 mole of C_2H_2?

A 2.5
B 2.0
C 5.0
D 10



a

What is the **molarity** of a solution of NaOH if 2 liters of the solution contains 4 moles of NaOH?

A 0.5 M
B 2 M
C 8 M
D 80 M

b