Chemical Reactions

CHEM

Name _____ Class _____ Date _____

1 Given the reaction:

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

Which **half-reaction** correctly shows the **oxidation** that occurs?

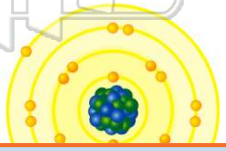
A $Fe(s) \rightarrow Fe^{2+}(aq) + 2e^-$
B $Fe(s) + 2e^- \rightarrow Fe^{2+}(aq)$
C $Cu^{2+}(aq) \rightarrow Cu(s) + 2e^-$
D $Cu^{2+}(aq) + 2e^- \rightarrow Cu(s)$

2 In which kind of reaction is **soap** one of the **products**?

A oxidation
B saponification
C neutralization
D fermentation

3 Which **metal** is produced by the **electrolytic reduction** of its fused salt?

A Fe
B Zn
C K
D C



4 Given the reaction:

$N_2(g) + 3H_2(g) \rightleftharpoons 2NH_3(g) + energy$

If the temperature is increased and the pressure is kept constant, the new equilibrium concentration will be

A less for $NH_3(g)$
B the same for $NH_3(g)$

5

7

C both matter and energy
D neither matter nor energy

C polymerization
D fermentation

9 Given the reaction:

$Fe_2O_3 + 3CO + heat \rightarrow 2Fe + 3CO_2$

Which substance in this process acts as the **oxidizing agent**?

A Fe
B Fe_2O_3
C CO
D CO_2

10 Which reaction has the **greatest increase** in **entropy**?

A $2H_2O(l) \rightarrow 2H_2(g) + O_2(g)$
B $2H_2O(g) \rightarrow 2H_2(g) + O_2(g)$
C $H_2O(g) \rightarrow H_2O(l)$
D $H_2O(l) \rightarrow H_2O(s)$

ANSWER KEY

Given the reaction:

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

Which **half-reaction** correctly shows the **oxidation** that occurs?

A $Fe(s) \rightarrow Fe^{2+}(aq) + 2e^-$
B $Fe(s) + 2e^- \rightarrow Fe^{2+}(aq)$
C $Cu^{2+}(aq) \rightarrow Cu(s) + 2e^-$
D $Cu^{2+}(aq) + 2e^- \rightarrow Cu(s)$

a

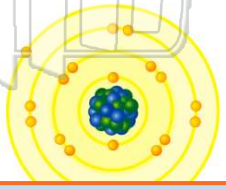
In which kind of reaction is **soap** one of the **products**?

A oxidation
B saponification
C neutralization
D fermentation

b

Which **metal** is produced by the **electrolytic reduction** of its fused salt?

A Fe
B Zn
C K
D C



c

Given the reaction:

$N_2(g) + 3H_2(g) \rightleftharpoons 2NH_3(g) + energy$

If the temperature is increased and the pressure is kept constant, the new equilibrium concentration will be

A less for $NH_3(g)$
B the same for $NH_3(g)$
C less for $N_2(g)$

a

D neither matter nor energy

D fermentation

Given the reaction:

$Fe_2O_3 + 3CO + heat \rightarrow 2Fe + 3CO_2$

Which substance in this process acts as the **oxidizing agent**?

A Fe
B Fe_2O_3
C CO
D CO_2

b

Which reaction has the **greatest increase** in **entropy**?

A $2H_2O(l) \rightarrow 2H_2(g) + O_2(g)$
B $2H_2O(g) \rightarrow 2H_2(g) + O_2(g)$
C $H_2O(g) \rightarrow H_2O(l)$
D $H_2O(l) \rightarrow H_2O(s)$

a