Oxidizing Agents and Reducing Agents

1. In the reaction **$Cu(s) + 2Ag^{+}(aq) \rightarrow Cu^{2+}(aq) + 2Ag(s)$**

a	Cu(s) is reduced by the oxidizing agent
b	$Ag^{+}(aq)$ is the reducing agent and Cu(s) is reduced.
c	Cu(s) is the reducing agent and $Ag^{+}(aq)$ is reduced
d	Cu(s) is the oxidizing agent and $Ag^{+}(aq)$ is oxidized

2. The oxidizing agent in a redox equation_____ electrons and undergoes the process of _____.

a	loses electrons and is reduced
b	gains electrons and is reduced
c	loses electrons and is oxidized
d	gains electrons and is oxidized

3. Aaron and Gerald are asked to balance the following reaction in an acidic solution.
$ClO_3^{-}(aq) + Cl_2(g) \rightarrow ClO^{-}(aq)$

They find that _____ is the reducing agent and it changes its oxidation number from ____ to _____.

a	$ClO_3^{-}(aq)$	-5	-1
b	$ClO_3^{-}(aq)$	+5	+1
c	$Cl_2(g)$	0	+1
d	$Cl_2(g)$	0	-1

4. Aaron and Gerald are asked to balance the following reaction in an acidic solution.
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c	$Cl_2(g)$	0	+1
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5. Silver compounds, such as $AgNO_3(aq)$, can act as strong oxidizing agents because

a	silver metal can easily be oxidized to silver ions
b	silver metal can easily be reduced to silver ions
c	silver ions can easily be oxidized to silver metal
d	silver ions can easily be reduced to silver metal

6. An aluminum strip is placed into aqueous copper (II) nitrate. The oxidizing agent for the reaction that occurs is _____

a	$Al(s)$
b	$Al^{3+}(aq)$
c	$Cu(s)$
d	$Cu^{2+}(aq)$

7. The strongest reducing agent listed below is _____.

a	$Fe(s)$
b	$Cd^{2+}(aq)$
c	$F^{-}(aq)$
d	$I_2(s)$

8. The strongest oxidizing agent _____.

a	$Br_2(l)$
b	$Cl_2(g)$
c	$Cl^{-}(aq)$
d	$Br^{-}(aq)$

9. Consider the reaction given below.

   $2Sn^{2+}(aq) \rightarrow Sn(s) + Sn^{4+}(aq)$

   A correct statement is for this reaction is _____

a	The reaction is spontaneous
b	The reaction involves a decrease in potential energy
c	$Sn^{2+}(aq)$ undergoes disproportionation
d	Sn(s) is the oxidizing agent.

10. In the reaction **$2Ag^{+}(aq) + Cu(s) \rightarrow 2Ag(s) + Cu^{2+}(aq)$,** the silver ion is _____ and is the _____ agent.

a	Oxidized	Reducing
b	Oxidized	Oxidizing
c	Reduced	Oxidizing
d	Reduced	reducing

11. Which oxidizing agent **<u>cannot</u>** be used to spontaneously oxidize **$Sn^{2+}(aq)$**?

a	$Fe^{3+}(aq)$
b	$Fe^{2+}(aq)$
c	$Cu^{2+}(aq)$
d	$Br_2(l)$

Solutions:

1. C
2. B
3. C
4. B
5. D
6. D
7. A
8. B
9. C
10. C
11. B