

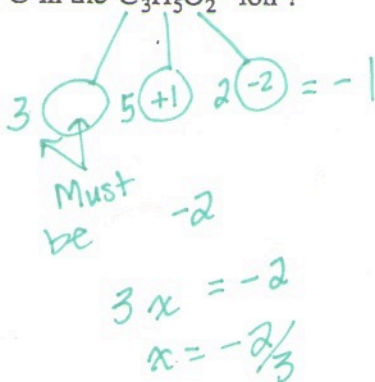
Redox Practice

(Introduction to Redox)

Part One: Multiple Choice - circle the best response

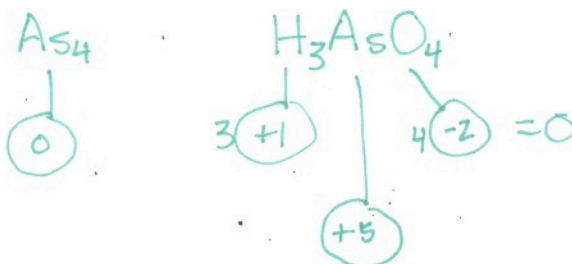
1. What is the oxidation number of C in the $C_3H_5O_2^-$ ion?

- A. $-\frac{1}{3}$
- B. $-\frac{2}{3}$
- C. -1
- D. -2



2. When As_4 is changed to H_3AsO_4 the oxidation number of the As

- A. decreases by 5.
- B. increases by $5/4$.
- C. increases by 5.
- D. increases by 20.



3. The reduced substance in a chemical reaction

- A. is the reducing agent and loses electrons.
- B. is the reducing agent and gains electrons.
- C. is the oxidizing agent and loses electrons.
- D. is the oxidizing agent and gains electrons.

LEO says GER

↓
gains e^-

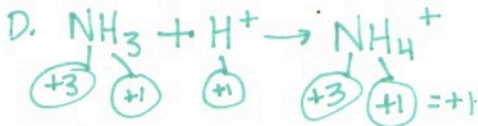
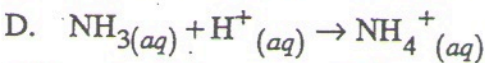
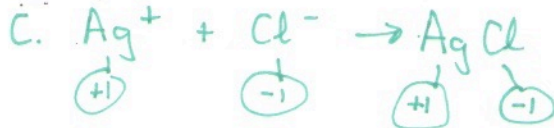
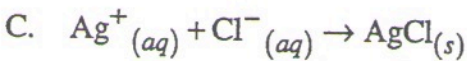
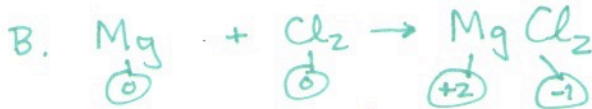
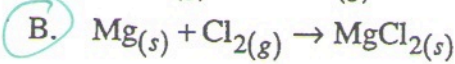
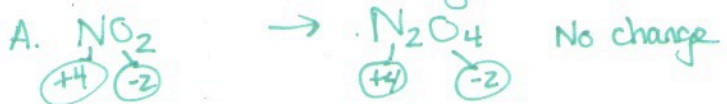
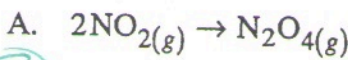
when it gains, it causes the other to lose (so causes the other to oxidize)

4 Which of the following best describes a *reducing agent*? \Rightarrow the one that oxidizes

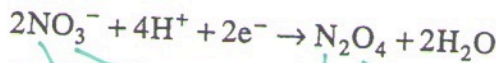
- A. a substance that is reduced in a reaction
- B. a substance that gains electrons in a reaction
- C. a substance that shows a decrease in oxidation number in a reaction
- D.** a substance that shows an increase in oxidation number in a reaction

LEO
(loses e^-)
 \therefore gets more positive)

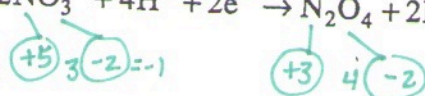
5 Which of the following is an equation representing a redox reaction? (gain \neq lose e^-)



6 Consider the following:



This equation represents

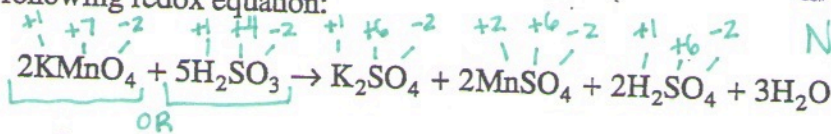


- A.** reduction.
- B. oxidation.
- C. neutralization.
- D. decomposition.

Also, e^- on reactant side means it is gaining electrons

*couple of points here; sulphur would only change once & since it is +6 in H_2SO_4 you can assume +6 in $MnSO_4$; K is predictable as +1 (alkali & alkaline earths are same as their charge)

7 Consider the following redox equation:



No evidence that H or O are changing.

Which species undergoes oxidation?

- A. H in H_2SO_3
- B.** S in H_2SO_3
- C. K in $KMnO_4$
- D. Mn in $KMnO_4$

quickest way? look at oxygen.



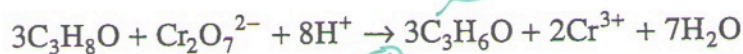
Then, is H or O changing?

NOPE.

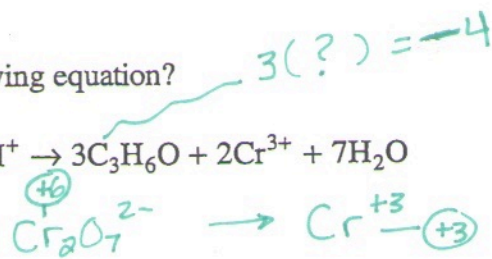
*you can also use polyatomic ion charge Ex: SO_4^{2-} (sulphur would be +6)

8

Which statement is correct for the following equation?

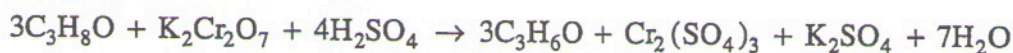


- A. Cr in $\text{Cr}_2\text{O}_7^{2-}$ gains electrons.
 B. $\text{C}_3\text{H}_8\text{O}$ acts as the oxidizing agent.
 C. The equation is not a redox equation.
 D. $\text{Cr}_2\text{O}_7^{2-}$ is oxidized and $\text{C}_3\text{H}_8\text{O}$ is reduced.



9

Consider the following redox equation:

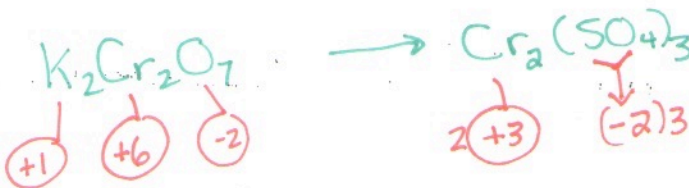


Which species is the oxidizing agent?

- A. C in $\text{C}_3\text{H}_8\text{O}$
 B. H in $\text{C}_3\text{H}_8\text{O}$
 C. O in $\text{C}_3\text{H}_8\text{O}$
 D. Cr in $\text{K}_2\text{Cr}_2\text{O}_7$

ie: which one is reduced?

neither H or O show evidence of changing.



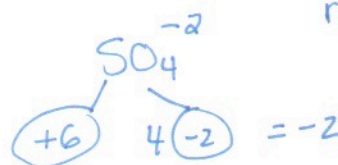
10

Identify the substance that is oxidized in the following equation:



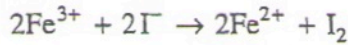
- A. Br_2
 B. SO_2
 C. H_2O
 D. Na_2SO_4

to get O.N. for sulphur:



rely on polyatomic ion.

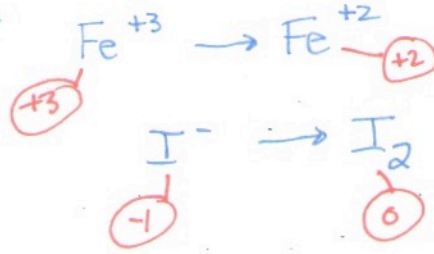
11 What is the reducing agent in the following equation?



which one is being oxidized?
which one is losing e⁻?

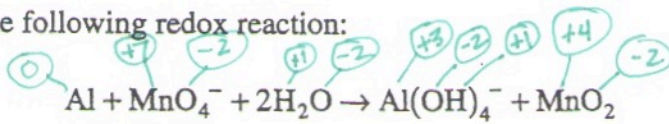
- A. I₂
- B. I⁻
- C. Fe²⁺
- D. Fe³⁺

answer will
not be a product
unless \longleftrightarrow



12

Consider the following redox reaction:



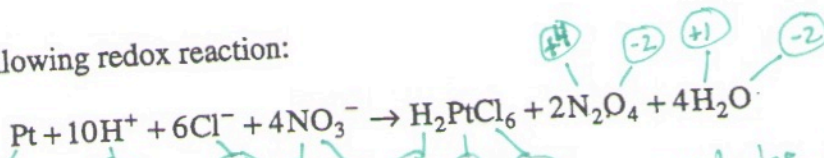
The chemical species being oxidized is

- A. Al
- B. MnO₄⁻
- C. Al(OH)₄⁻
- D. MnO₂

* look at amount of oxygen



13 Consider the following redox reaction:



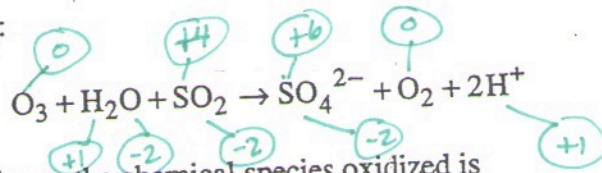
The reactant that gains electrons is

- A. Pt
- B. H⁺
- C. Cl⁻
- D. NO₃⁻

must be -1 b/c
Pt is probably changing
(ie: it would no longer be zero)

14

Consider the following:



In the redox reaction above, the chemical species oxidized is

- A. H^+
- B. O_3
- C. SO_2
- D. SO_4^{2-}

15

When W_2O_5 is converted to WO_2 in a redox reaction, the W has been

- A. reduced since its oxidation number has increased.
- B. reduced since its oxidation number has decreased.
- C. oxidized since its oxidation number has increased.
- D. oxidized since its oxidation number has decreased.

16

A product of the oxidation of NO_2 is

- A. NO
- B. N_2O
- C. NO_2^-
- D. NO_3^-

→ more oxygen.

check:

