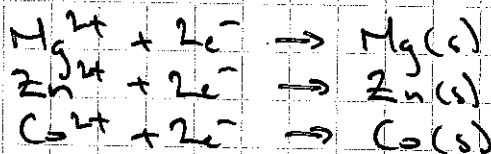


# Predicting Redox Reactions

① Zn above Co

Zn below Mg

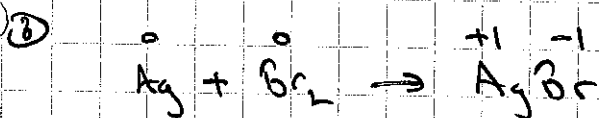
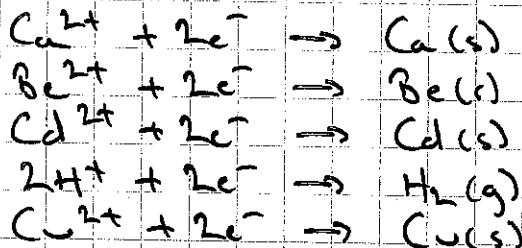


② Be above Cd

Cd above  $\text{H}^{+}$

Be below Ca

Cu below  $\text{H}^{+}$



Ag gets oxidized, ∴ it is the reducing agent

$\text{Br}_2$  gets reduced, ∴ it is the oxidizing agent

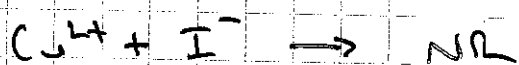
since reaction occurs, R.A. is above O.A. ( $\text{Ag}$  above  $\text{Br}_2$ )



$\text{Ag} = \text{R.A.}$       $\text{I}_2 = \text{O.A.}$

since no reaction, O.A. above R.A. ( $\text{I}_2$  above  $\text{Ag}$ )

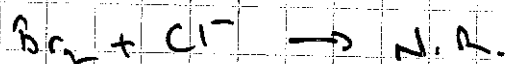
③ cont'd



$\text{Cu}^{2+}$  = O.A. (it only appears on O.A. side of table)

$\text{I}^{-}$  = R.A. (it only appears on R.A. side of table)

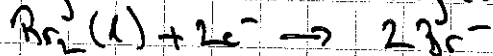
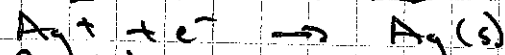
Since N.R., O.A. above R.A. ( $\text{Cu}^{2+}$  above  $\text{I}^{-}$ )



$\text{Br}_2$  = O.A. (it only appears on O.A. side of table)

$\text{Cl}^{-}$  = R.A. (it only appears on R.A. side of table)

Since N.R., O.A. above R.A. ( $\text{Br}_2$  above  $\text{Cl}^{-}$ )



④  $\text{Ag}^{+}$ ,  $\text{Cu}^{2+}$ ,  $\text{Pb}^{2+}$ ,  $\text{Zn}^{2+}$

↑  
lowest on  
table

↑  
highest on  
table

5

a) R

d) R

b) NR

e) R

c) NR

f) R (w/ nitrate ions)

6) Al(s) reacts with every ion, so it must be the most reactive, making it the S.R.A. Thus it goes at the top.

Tl(s) reacts with nothing, so it is the least reactive. Thus it goes at the bottom.

In<sup>3+</sup> reacts with Ga(s), so Ga(s) is above In<sup>3+</sup>.

