NAME_____

Year 11 Chemistry Assignment
Redox Reactions 1

1. Determine (with reasons) which of the following reactions are redox, and which are not.
   (a) $Mg + Br_2 \rightarrow MgBr_2$ /2
   (b) $NaCl + H_2CO_3 \rightarrow NaCl + H_2O + CO_2$ /2
   (c) $2H_2 + O_2 \rightarrow 2H_2O$ /2
   (d) $KI \rightarrow K^+ + I^-$ /2

2. Use the half-equation method to write balanced ionic equations for the following reactions:
   (a) The rusting of iron in air to become iron III oxide /3
   (b) Metallic zinc added to a copper (II) nitrate solution, forming copper metal and zinc ions /3
   (c) Hydrogen peroxide is added to hypochlorite ions (OCl^-) in solution, forming oxygen gas and chloride ions /3
   (d) Sulfur dioxide placed in an iodate (IO_3^-) solution resulting in iodide ions and sulfate ions /3
   (e) Solutions of sodium permanganate (KMnO4) and iron (II) nitrate react. Manganese ions and iron (III) ions are produced. /3
   (f) Hydrogen sulfide gas is oxidised to sulfur solid by bubbling through potassium dichromate solution. /3

3. For the reaction in question 2 a:
   (a) State which species is the oxidizing agent. /1
   (b) State which species is the reducing agent. /1
   (c) State which species is oxidized. /1
   (d) State which species is reduced. /1

TOTAL MARKS /30