**5.3B HONORS HOMEWORK – OXIDATION NUMBERS**

1. Deduce the oxidation numbers of the atoms in the following species:

|  |  |
| --- | --- |
| Formula | Oxidation Numbers |
| H2SO4 | H = +1, S = +6, O = -2 |
| PbO2 |  |
| NO2- |  |
| I2 |  |
| KClO3 |  |
| CaC2 |  |
| ZnH2 |  |
| TlCl |  |
| C2O42- |  |
| OF2 |  |
| Fe3O4 | Hint: The ON of Fe is not a whole number |
| S4O62- | Hint: The ON of S is not a whole number |
| H2O2 |  |

1. In the following processes, indicate which atom’s oxidation number is changing, and hence state whether process constitutes oxidation or reduction

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Process | Atom changing | From | To | Oxidation or Reduction? |
| KBr 🡪 Br2 | Br | -1 | 0 | oxidation |
| KClO 🡪 KClO3 |  |  |  |  |
| KClO 🡪 KCl |  |  |  |  |
| H2SO4 🡪 SO2 |  |  |  |  |
| H2SO4 🡪 S |  |  |  |  |
| CH4 🡪 CO2 |  |  |  |  |
| CO2 🡪 C6H12O6 |  |  |  |  |
| CO 🡪 CO2 |  |  |  |  |