

CHEMISTRY 2.7

Name: _____

WORKSHEET ONE

REDOX #1

1. State the oxidation number of the underlined element in each of the following species.

- | | | | |
|---|-------|--|-------|
| (a) <u>H</u> Cl | _____ | (j) <u>Fe</u> SO ₄ | _____ |
| (b) <u>C</u> O ₂ | _____ | (k) <u>Fe</u> ₂ (CO ₃) ₃ | _____ |
| (c) <u>S</u> O ₃ ²⁻ | _____ | (l) <u>KMn</u> O ₄ | _____ |
| (d) <u>C</u> O | _____ | (m) <u>Mn</u> I ₂ | _____ |
| (e) <u>KI</u> | _____ | (n) <u>CaO</u> | _____ |
| (f) <u>H</u> ₂ <u>O</u> ₂ | _____ | (o) <u>Cr</u> ₂ <u>O</u> ₇ ²⁻ | _____ |
| (g) <u>Cr</u> (NO ₃) ₃ | _____ | (p) <u>H</u> <u>S</u> O ₃ ⁻ | _____ |
| (h) <u>Br</u> ₂ | _____ | (q) <u>Zn</u> O | _____ |
| (i) <u>H</u> ₂ <u>S</u> O ₄ | _____ | (r) <u>H</u> ₂ <u>O</u> | _____ |

2. State whether each of the following examples is an oxidation or a reduction reaction.

- (a) Gain of oxygen. _____
- (b) Gain of hydrogen. _____
- (c) An element becoming a negative ion. _____
- (d) An atom that increases its oxidation number. _____

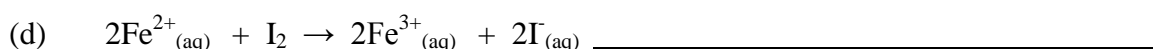
3. State whether each of the following reactions is an oxidation or a reduction reaction.

- (a) O₂ to O²⁻ _____
- (b) I₂ to I⁻ _____
- (c) Mg to Mg²⁺ _____
- (d) HSO₃⁻ to SO₄²⁻ _____
- (e) Fe³⁺ to Fe²⁺ _____
- (f) Br⁻ to Br₂ _____
- (g) Cr₂O₇²⁻ to Cr³⁺ _____
- (h) MnO₄⁻ to Mn²⁺ _____
- (i) Cl₂ to Cl⁻ _____
- (j) H⁺ to H₂ _____

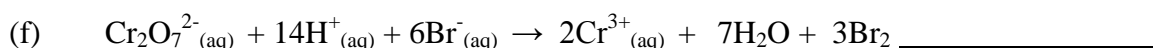
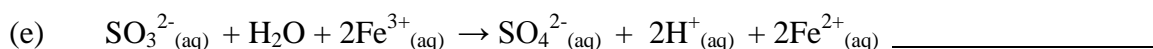
4. For each of the reactions that follow write the balanced ion-electron half equation.



5. For each of the following reactions, state which element is acting as the **oxidant** and which is acting as the **reductant (extension)**



6. For each of the following reactions, state which element is being oxidised and which is being reduced.



7. Referring to Question 6 explain your reasoning for

(a) _____

(c) _____

(d) _____