

Deadline: Monday 23<sup>rd</sup> January 2:00 pm. Your work must be placed in the chemistry drop-box.

## Homework for Submission 01-2012

### #1 Ionic Equations

Write balanced net ionic equations, including states, in each of the following cases. Do not write equations unless there is a definite chemical reaction. If an equation is unbalanced it will attract zero marks: check carefully. Do not include spectator ions. Each answer line should be completed with an equation or the words "no reaction".

Answers refer to the relevant page or equation in your lab manual.

1. Addition of dilute ammonia solution to a solution of magnesium chloride.

Eqn. 1.2 except Mg in place of Zn

2. The addition of dilute sodium hydroxide solution to a solution of aluminium sulfate, until in excess.

Eqn. 1.3 except Al in place of Fe

Like eqn. 1.9:  $\text{Al(OH)}_3(\text{s}) + \text{OH}^-(\text{aq}) \rightarrow [\text{Al(OH)}_4]^-(\text{aq})$

3. The addition of dilute ammonia solution to a solution of zinc chloride, until in excess.

Eqn. 1.2

Eqn. 1.9

4. The addition of dilute sodium hydroxide to a solution of silver nitrate until in excess.

Eqn. 1.4 or  $2\text{Ag}^+(\text{aq}) + 2\text{OH}^-(\text{aq}) \rightarrow \text{Ag}_2\text{O}(\text{s}) + \text{H}_2\text{O}(\text{l})$

No reaction

5. The addition of barium nitrate solution, followed by dilute hydrochloric acid, to a solution of sodium dichromate.

Eqn. 2.6

Eqn. 2.9

6. The addition of barium nitrate solution, followed by dilute hydrochloric acid, to a solution of sodium sulfite.

Eqn. 2.2

Eqn. 2.7

7. The addition of barium nitrate solution, followed by dilute hydrochloric acid, to a solution of potassium sulfate.

Eqn. 2.1

No reaction (see top of page 19)

8. The addition of silver nitrate solution, followed by excess dilute ammonia solution, to a solution of calcium bromide.

Eqn. 2.1

No reaction (see top of page 17)

9. The addition of silver nitrate solution, followed by concentrated ammonia solution, to a solution of potassium iodide.

Eqn. 2.19

No reaction (see top of page 17)

10. The addition of Devarda's alloy and concentrated sodium hydroxide solution to a solution of sodium nitrate solution. (Two simultaneous reactions.)

Eqn. 2.22

Eqn. 2.24