## Quiz 4.3 – Redox Reactions

### Question 1

Give the oxidation numbers for *each* element in the following compounds

- o N<sub>2</sub>O
- o CH<sub>3</sub>OH
- ∘ CO<sub>3</sub><sup>2−</sup>
- o SO<sub>4</sub><sup>2-</sup>

### Question 2

Identify the *reducing agent* and the *oxidizing agent* in each reaction

$$\mathrm{C_3H_8}(g) + 5\,\mathrm{O_2}(g) \, \longrightarrow \, 3\,\mathrm{CO_2}(g) + 4\,\mathrm{H_2O}(g)$$

$$8 H_2S(g) + 8 Cl_2(g) \longrightarrow S_8(s) + 16 HCl(g)$$

### Question 3

State whether the reactions will proceed
spontaneously or not

$$Fe(NO_3)_2(aq) + Sn(s) \longrightarrow Sn(NO_3)_2(aq) + Fe(s)$$

$$Cr(NO_3)_3(aq) \, + \, Al(s) \, \longrightarrow \, Al(NO_3)_2(aq) \, + \, Cr(s)$$

#### **Activity Series**

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Best Reducing Agents	Worst Oxidizing Agents
Al	Al <sup>3+</sup>
Cr	$ m Cr^{3+}$
Fe	Fe <sup>2+</sup>
Sn	Sn <sup>2+</sup>
Worst Reducing Agents	Best Oxidizing Agents

# 游子吟 (Song of a Traveling Son)

## By 孟郊 (Meng Jiao)

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慈母手中线,游子身上衣。
临行密密缝,意恐迟迟归。
谁言寸草心,报得三春晖。
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Thread in the hands of a loving mother Turns to clothes on the traveling son. She adds stitch after tight stitch until he leaves and worries about his return. A grass blade is bathed in spring sun; how can its inch-sized heart return such love?