Wednesday, May 29/13
Science 122

Announcements

**** Need an activity re a course topic before the end of <u>May</u>.**

1. Exam Review - Thermodynamics
2. Worksheets (3) - Redox Tables, Predicting Entities and Predicting Redox Reactions
3. Redox Reactions and Titrations - 3 Lab Exercises

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4. Redox Numbers
5. Using Redox Numbers to Balance Redox Reactions
6. Old Nelson Text - Page 433, Exercise #46 (a-g)

Activity

Connection to Course Material -> 5

Pre-planning -> 5

Prepared on the Day -> 5

Participation -> 5

Exam: Outline - Thermodynamics

- thermodynamics
- thermal expansion
- Boyle's Law, Charles's Law, Combined Gas Law
- Ideal Gas Law
- Kinetic Theory of Gases (internal energy and kinetic energy)
- Laws of Thermodynamics (0^{th}, 1^{st}, 2^{nd}, 3^{rd})
- thermal processes (isobaric, isochoric, isothermal, adiabatic)
- heat engines and efficiency
- Carnot's Principle and Engine

Exam: Outline - Optics

- Law of Reflection
- Snell's Law (Refraction)
- Plane Mirror: ray diagram and POST
- Spherical Mirrors:
    - concave (converging) and convex (diverging)
    - labelled ray diagrams and POST
    - mirror and magnification equations (sign conventions)
    - fun house mirrors
- Lenses:
    - index of refraction
    - convex (converging) and concave (diverging)
    - labelled ray diagrams and POST
    - lens and magnification equations (sign conventions)
    - double lens problems

Exam: Outline - Magnetism

- magnetism
- magnetic domains
- magnetic field lines (N -> S)
- RHR/LHR's #1, 2 and 3
- symbols: in and out of page
- parallel wires
- electric motor: decide direction of armature or I
- force acting on a straight wire
- force acting on a single charged particle
- radius of a single particle in a uniform magnetic field
- velocity selector (perpendicular B and E fields, v)
- mass spectrometer (q to m ratio)
- electromagnetic inductance
- Lenz's Law
- EMF
- Ohm's Law
- self-inductance and mutual inductance
- transformers (primary and secondary coils, turns ratio, power)