APES Unit 9 Exam: Common Study Guide
Energy Alternatives

You should know the following topics thoroughly. Be able to describe, explain, and/or give examples. You MAY NOT use a calculator on the exam.

Chapter 20

- How does nuclear power produce electricity? (fission process, radioactive U-235 is the fuel)
- Advantages and Disadvantages of Nuclear Power
- Nuclear vs. coal (Figure 20.7 Page 579)
- Large Nuclear Accidents – Chernobyl and Three Mile Island
- Traditional Biomass Sources (wood for fuel) used in developing world
- Biofuels – ethanol and biodiesel (describe how they are made and used)
- Cogeneration (Page 529-593 and in notes, define and give examples)
- Biomass Energy – ultimately, it is energy from the Sun and it is passed through trophic levels, define biomass
- Biomass Energy - Advantages and Disadvantages
- Hydroelectric Power – how are dams used to generate electricity?
- Hydroelectric Power – Advantages and Disadvantages

Chapter 21

- Renewable vs. Non-Renewable vs. Non-Depletable (notes)
- Passive vs. Active Solar Energy (describe, give examples)
- Passive Solar Energy – Solar Cookers – describe
- PV Cells – describe how they produce electricity, what are the plates made of, expensive
- Solar Energy - Advantages and Disadvantages
- Wind Power – how does it produce electricity, why are higher turbines better?
- Wind Power – Advantages and Disadvantages
- Geothermal Energy – describe, Iceland makes use of geothermal, since it is on a diverging plate boundary
- Geothermal Energy – Advantages and Disadvantages
- Hydrogen Fuel Cells – how are they used to run a bus? Reykjavik, Iceland and other European capitals currently use buses with hydrogen fuel cells