

## **APES Unit 6 Exam: Common Study Guide Geology, Soil Science, and Fossil Fuels**

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.

### **Geology Topics**

- Earth's Layers – composition (abundant elements)
- Types of plate boundaries (transform, convergent (3), and divergent).
- Real-world examples of the various plate boundaries.
- Explain how the Hawaiian Islands formed (hot spot volcanism).
- Rock Cycle Processes and Vocabulary (types of rock (3), weathering, erosion, compaction, cementation, crystallization)
- P-waves and S-waves – determining earthquake location
- Earth's History – Age of Earth, Geologic Time Scale

### **Chapter 9 Topics**

- Arable Land – What is it?
- Explain why tropical forests have low-nutrient soils. (Review Page 241)
- Water-holding capacity of soils – define, what soil type has the highest?
- Physical and Chemical Properties of Soil (pH, soil texture, porosity, permeability, water holding capacity, soil structure, cation exchange capacity)
- Crop rotation, contour farming, terracing, shelterbelts, reduced tillage agriculture, no-till agriculture
- Be able to read a soil texture triangle
- Permeability vs. Porosity (define, which soil type (if any) has highest and lowest?)
- Soil Horizons (O, A, E, B, C, R)
- Explain how grazing practices can degrade soil
- Subsidence Agriculture, Industrial Monoculture, Slash and Burn Agriculture
- Salinization – describe thoroughly, prevention/remediation strategies
- Desertification, Waterlogging
- Strategies for reducing the amount of land needed for agriculture

### **Chapter 19 Topics**

- Arctic National Wildlife Refuge (ANWR)
- Renewable vs. Non-Renewable Resources
- Global Distribution of Coal Supplies – what countries have the most? What percent does the U.S. have?
- Most Crude Oil reserves? Most Natural Gas reserves?
- What sources supply the majority of commercial energy in the world today?
- Advantages and Disadvantages of using coal, natural gas, and crude oil (petroleum)
- Formation of Coal and other Fossil Fuels
- Oil Refinery Process (Page 554-555)
- Primary vs. Secondary extraction of petroleum
- Other fossil fuels – Oil Sands (tar sands), Oil Shale, Methane Hydrate (methane ice)