

## APES Final Exam Review – Mrs. Bauck

- 1) **TWO FRQs (randomly chosen from any we have presented throughout the year) – 80 pts**  
 2) **MULTIPLE CHOICE, 184 questions – 184 pts.**

Ch. 10 – Wild Species and Biodiversity	Ch. 16 – Pests and Pest Control
Ch. 11 – Ecosystem Capital	Ch. 18 – Municipal Solid Waste
Ch. 12 – Fossil Fuels	Ch. 19 – Hazardous Waste
Ch. 13 – Nuclear Energy	Ch. 20 – The Atmosphere, Climate Change, Ozone Depletion
Ch. 14 – Alternate Energy	Ch. 21 – Air Pollution
Ch. 15 – Environmental Hazards and Human Health	

80 pts. FRQs + 184 MC questions total = 264 total pts.
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### Ch. 10 – biodiversity

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|---|-------------------------------|
| 1) <b>Biodiversity</b> : Causes for decline | 6) <b>Keystone species</b>    |
| 2) <b>CITES</b>                             | 7) <b>Lacey Act</b>           |
| 3) <b>Endangered species</b>                | 8) <b>MMPA</b>                |
| 4) <b>ESA</b>                               | 9) <b>Peregrine falcon</b>    |
| 5) <b>Ethnobotany</b>                       | 10) <b>Threatened species</b> |

### Ch. 11 – ecosystem capital

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|---|--|
| 11) <b>Aquaculture</b>                            | 19) <b>maximum sustainable yield</b>   |
| 12) <b>Biomes</b>                                 | 20) <b>natural capital</b>             |
| 13) <b>Conservation</b>                           | 21) <b>Natural Wildlife Refuges</b>    |
| 14) <b>coral reefs</b>                            | 22) <b>Overfishing</b>                 |
| 15) <b>deforestation</b>                          | 23) <b>Preservation</b>                |
| 16) <b>extractive reserves</b>                    | 24) <b>Total allowable catch (TAC)</b> |
| 17) <b>International Whaling Commission (IWC)</b> | 25) <b>“Tragedy of the commons”</b>    |
| 18) <b>Mangroves</b>                              | 26) <b>Wilderness</b>                  |

### Ch. 12 – fossil fuels

- 27) **Alaska pipeline**
- 28) **Barrel** of oil = how many gallons of oil?
- 29) **Cogeneration**
- 30) **Domestic oil production**: latest trends
- 31) **Efficiency** of conversion of coal to electrical energy (%)
- 32) **Electricity** – What is the pattern of daily demand?
- 33) **Energy source** of the U.S. from 1700-1800: which was the largest source of energy?
- 34) **Energy source** of the U.S.: which is the largest source of energy now?
- 35) **Fossil fuels**: Which releases the most pollution when burned? Which country has the highest per capita CO<sub>2</sub> emissions from burning fossil fuels?
- 36) **Intermediate conversion** of energy – examples
- 37) What were some U.S. reactions to the **OPEC oil embargo**?
- 38) **Sedimentary rocks**: Which one contains **bitumen**? Which one contains **kerogen**?

### Ch. 13 – nuclear energy

- 39) **Active** vs. **Passive safety**
- 40) **Atomic number** vs. **mass number**
- 41) **Breeder reactors** vs. regular nuclear reactors
- 42) **Chain reaction**
- 43) **Chernobyl**
- 44) **Enrichment** of U ore
- 45) **Half-life**
- 46) **Isotopes**

- 47) **Nuclear energy**: How has U.S. interest been in it lately? How do they relate to the **Laws of Conservation of Mass/Energy**?
- 48) **Nuclear power plants**: Which isotope is usually the main fuel?
- 49) **Nuclear reactors**: Function of parts—**fuel rods, control rods, breeder coils, reactor vessel**.
- 50) **Radioactive wastes**
- 51) **Subatomic particles**
- 52) **Three Mile Island**
- 53) **Yucca Mountain**

Ch. 14 – alternative energy

- 54) **Bioconversion**
- 55) **Biogas**
- 56) Chemical formula (know what they are and their relevance to this chapter): **CH<sub>4</sub>, CO<sub>2</sub>, O<sub>2</sub>**
- 57) **DO**
- 58) **Gasohol**: What are usually the percentages of gasoline and alcohol in gasohol?
- 59) **Geothermal energy**
- 60) **Hydropower**
- 61) **IR radiation**
- 62) **OTEC** (*not* OPEC!)
- 63) **Solar power**: Describe **PV cells, flat-plate collectors, active vs. passive heating**.
- 64) **Tidal power**
- 65) **uv radiation**
- 66) **Wind power**

Ch. 15 – hazards and health

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|--|------------------------------------|
| 67) <b>Carcinogens</b>                                       | 75) <b>LD-50</b>                   |
| 68) <b>Cigarette smoke</b>                                   | 76) <b>Indoor air pollutants</b>   |
| 69) <b>Cost-benefit analysis</b>                             | 77) <b>Morbidity</b>               |
| 70) <b>DALY</b>  | 78) <b>Mortality</b>               |
| 71) <b>Epidemiologic transition</b>                          | 79) <b>Precautionary Principle</b> |
| 72) <b>ETS</b>   | 80) <b>Risk assessment</b>         |
| 73) <b>Global risk factors</b>                               | 81) <b>Risk perception</b>         |
| 74) <b>Hazards: cultural, biological, physical, chemical</b> | 82) <b>Toxicology</b>              |
|  | 83) <b>Vector</b>                  |

Ch. 16 – pest control

- 84) **Biodegradable**
- 85) **Broad-spectrum**
- 86) Chemical formula (know what it is and its relevance to this chapter): **(PO<sub>4</sub>)<sup>3-</sup>**
- 87) “-cides”: **pesticide, rodenticide, fungicide, herbicide**
- 88) **Cosmetic spraying**
- 89) **DDT**: What is its history and background info? Approximately when was it rediscovered? What are the health and environmental effects?
- 90) **Ecological/cultural pest control**
- 91) **First-generation pesticides**
- 92) **IPM**
- 93) **JH**
- 94) **Natural chemical insect control**
- 95) **Organic produce**
- 96) **Resistance to pesticides**
- 97) **Resurgence**
- 98) **Second-generation pesticides**
- 99) **Secondary post-outbreak**
- 100) **Sterile technique of insect control**

Ch. 18 – solid waste

- 101) **Aluminum recycling**
  - 102) **Composting**: How is it accomplished? What can you compost? What shouldn't you compost and why?
  - 103) What is the **final destination** of most MSW in the U.S.?
  - 104) **Glass recycling**
  - 105) **HDPE**
  - 106) **Landfills**: Pros and cons; overall design; process for **siting**; how things decompose
  - 107) **Leachate**: What is it? How is it controlled?
  - 108) **LDPE**
  - 109) **Methane**: Possible hazards?
  - 110) **MSW**: What are the major components of MSW?
  - 111) **NIMBY**
  - 112) **PAYT**
  - 113) **PETE**
  - 114) **Pre-consumer waste vs. post-consumer waste**
  - 115) **Primary recycling**
  - 116) **PS**
  - 117) **PVC**
  - 118) **Recycling vs. reuse**
  - 119) **SWDA (Solid Waste Disposal Act of 1965)**
  - 120) **WTE**: How does it work?
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Ch. 19 – hazardous waste

- 121) **Acute vs. chronic exposure**
  - 122) **Brownfield**
  - 123) **CERCLA/Superfund**
  - 124) **Deep-well injection**
  - 125) **“Green” products**:
  - 126) **Halogens**
  - 127) **HAZMAT**
  - 128) **Heavy metals**
  - 129) **Ignitability**
  - 130) **Love Canal**
  - 131) **Midnight dumping**
  - 132) **MSDS**: How it is used?
  - 133) **Orphan site**
  - 134) **OSH Act of 1970**
  - 135) **Phytoremediation**
  - 136) **Pollution avoidance vs. pollution control**
  - 137) **POPs**: examples & characteristics
  - 138) **SARA Title III**
  - 139) **Secure landfill**
  - 140) **Surface impoundment**: Give examples.
  - 141) **Superfund sites**: What are they? How many are in the U.S.?
  - 142) **TRI**
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Ch. 20 - atmosphere

- 143) **Anthropogenic**: What is it? Major sources of CH<sub>4</sub>, N<sub>2</sub>O, CO<sub>2</sub>, CFCs
- 144) Which country has the largest CO<sub>2</sub> emissions?
- 145) **CFCs**: What are they? Why are they harmful to ozone?
- 146) Chemical formulas (know what they are and their relevance to this chapter): **CO, CO, CO<sub>2</sub>, N<sub>2</sub>O, O<sub>2</sub>, O<sub>3</sub>**
- 147) **Global temperature** rising: Give two major impacts.
- 148) **Greenhouse gases**: Describe how they work. Give examples.
- 149) **HCFCs**: Why are they better than CFCs?

- 150) **Hydrocarbons:** Give examples.
  - 151) **IR radiation:** How does it relate to the greenhouse effect?
  - 152) **Meteorology**
  - 153) **Montreal Protocol**
  - 154) **Oceanic Conveyor**
  - 155) **Ozone:** Contrast **tropospheric** vs. **stratospheric ozone**
  - 156) **Precautionary Principle**
  - 157) **Stratosphere**
  - 158) **Troposphere**
  - 159) **UVB:** How does it affect O<sub>2</sub> molecules?
  - 160) **VOCs**
  - 161) **Weather** vs. **climate**
  - 162) **Wavelengths** of IR vs. violet light
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Ch. 21 – air pollution

- 163) **Acids**
- 164) **Bases**
- 165) **Catalytic converter:** function
- 166) Chemical formulas (know what they are and their relevance to this chapter: NO<sub>x</sub>, SO<sub>x</sub>, N<sub>2</sub>O, NO<sub>2</sub>, SO<sub>2</sub>, CO<sub>2</sub>, CO, H<sub>2</sub>SO<sub>4</sub>, HNO<sub>3</sub>, OH<sup>-</sup>, OH<sup>\*</sup>, H<sup>+</sup>)
- 167) **CAA – Clean Air Act amendments of 1990**
- 168) **CO<sub>2</sub> emissions:** ways to reduce them
- 169) **Greenhouse effect**
- 170) **Halocarbons**
- 171) **Oxidative pollutant** examples
- 172) **Hydroxyl radical:** What is its beneficial role in the atmosphere?
- 173) **pH:** what is it? What is the numerical range for acids and bases? What is **neutral** pH? What is the approximate pH or normal **precipitation**?
- 174) **smog: photochemical** vs. **industrial**
- 175) **SO<sub>2</sub> emissions:** ways to reduce them