Name _____ Date _____
APES Topic 11 – Energy Resources Mr. Romano

Energy Resources Exam Study Guide

1. Be able to classify an energy resource as renewable or nonrenewable.
2. Which countries have the most reserves of coal, oil, natural gas, and uranium? (just #1 on our lists)
3. Be able to label a power plant (fossil fuel-burning or nuclear) and know the functions of key parts.
4. Know the basic greenhouse gases produced as a result of using energy resources.
5. Know the difference between passive, active, and photovoltaic solar systems.
6. What is the main source of household energy used in developed and developing countries?
7. What is the efficiency of coal-fueled power plants compared to natural gas power plants?
8. Which fossil fuel causes the most environmental pollution? Which causes the least?
9. Know the 3 historical examples of oil spills that had negative effects on people, animals, and the environment.
10. What are the main methods used to clean up oil spills?
11. Know the difference between primary, secondary, and enhanced oil recovery.
12. Know the different types of coal and their properties.
13. Know the meaning (and products of) oil distillation.
14. Know how high and low-level radioactive wastes are presently handled.
15. What are 3 historical examples used to argue that nuclear energy is unsafe?
16. Nuclear waste Policy Act of 1982 – What was its main provision?
17. Know the efficiencies of basic energy-using devices (light bulbs, automobile engines)
18. Know the structure of an oil/natural gas trap.
19. What energy resources would fracking be used to extract?
20. What are the positives and negatives of hydraulic fracturing?
21. How does nuclear fission work? How does the reaction self-sustain itself?

22. Know how to handle a radioactive decay problem. Here are a couple of examples:

    a. A rock sample that originally contained 100 grams of uranium-235 (half-life: 710 million years) now contains only 12.5 grams of uranium-235. Approximately how many years has this rock existed?
    (A) 710 million
    (B) 1.42 billion
    (C) 2.13 billion
    (D) 2.84 billion
    (E) 3.55 billion

    b. The half-life of plutonium-239 is 24,100 years. What fraction of Pu-239 will remain after 144,600 years?
    (A) 1/4
    (B) 1/8
    (C) 1/16
    (D) 1/32
    (E) 1/64

23. Be able to do an energy calculation like we performed on pages 194-197 (no calculator though …)

24. Oil Pollution Act of 1990: Why was it enacted? What were its main provisions?

25. What is meant by the term "carbon neutral'? Which energy resource is this term associated with?

26. What is meant by cogeneration? Give an example.

27. How does hydropower work?

28. What are the negative aspects of hydroelectric dams?

29. Which is more efficient solar or wind? What are two negative aspects that solar and wind power have in common?

30. What is a fish ladder?

31. What are the main problems associated with geothermal energy production?