**Chapter 15**

1. What is the potential for increased gas and oil in the USA?  What 2 major problems does the US need to overcome?
2. What is net energy yield? What is the second law of thermodynamics?
3. Why do some energy sources need subsidies?  Explain and give an example
4. What is crude oil or petroleum?  What is peak production? Why do we have to refine oil?
5. What is petrochemicals and what are some its uses?
6. What 3 countries are the largest producers of oil?
7. What 5 factors determine availability?
8. What are proven oil reserves?
9. Define horizontal drilling, hydraulic fracturing and fracking. Explain how these techniques are being used to extract tightly held oil and natural gas from shale rock. ( Focus 15.1)
10. What are the 3 future choices for the US?
11. What are the major environmental costs of using oil?
12. List the advantages and disadvantages of using light oil as an energy source
13. What is the long term problem for the US?
14. Explain how we get heavy oil for shale rock and tar sands. What is kerogen and bitumen?  What are the advantages and disadvantages to these techniques?
15. What is natural gas, liquefied petroleum gas and liquefied natural gas? What 3 countries have the largest portion of natural gas? What % does the US and China have?
16. What are the advantages and disadvantages of using conventional natural gas?
17. Production has increased in the US because of fracking . What are 2 drawbacks?
18. Name 2 other unconventional sources of natural gas and discuss the problems associated with their use.
19. What 3 countries have the largest supply of coal?  What % of coal US electricity comes from coal?What are the advantages and disadvantages to using coal?  How does a coal burning power plant work?
20. Synthetic natural gas comes from coal (SNG) what are the advantages and disadvantages of using SNG?
21. What are 3 ways to decommission a nuclear power plant? What are the advantages and disadvantages of  conventional nuclear fuel cycle to produce electricity.
22. Why is using nuclear power a problem? Can nuclear power lessen dependence on imported oil?  What is its future?
23. What happened March 11, 2011 in the Fukushima Daiichi  Nuclear power plant? What 4 human factors contributed to the problem?
24. List and explain 3 major factors that have kept nuclear power plants from growing.