

Name: \_\_\_\_\_ Date: \_\_\_\_\_

## Conceptual Chemistry - Semester II Study Guide

1. Balance the following equations.
  - a.  $\text{N}_2 + \text{H}_2 \rightarrow \text{NH}_3$
  - b.  $\text{CH}_4 + \text{O}_2 \rightarrow \text{CO}_2 + \text{H}_2\text{O}$
  - c.  $\text{HCl} + \text{NaOH} \rightarrow \text{H}_2\text{O} + \text{NaCl}$
2. Describe how you know when the equation is balanced?
3. What are renewable resources and give some examples of them.
4. What are non renewable resources and give some examples of them.
5. What is a diatomic element? What are the 7 examples?
6. A mole of a substance contains how many molecules?
7. The mass of one mole of an element is equal to \_\_\_\_\_.
  - a. The mass of one mole of  $\text{H}_2\text{O}$  is ?
  - b. The mass of one mole of  $\text{NaCl}$  is?
  - c. The mass of one mole of  $\text{H}_2\text{SO}_4$ ?
8. What are alloys?

9. What 3 examples of alloys?
  
10. What are allotropes?
  
11. What are the three allotropes of carbon?
  
12. What are metalloids also known as?
  
13. What is a covalent bond?
  
14. What two elements form a hydrocarbon?
  
15. What is the purpose of drawing structural formulas?
  
16. Distillation separates compounds based on \_\_\_\_\_.
  
17. What element do all organic compounds contain?
  
18. What is the maximum amount of bonds that carbon can form with other molecules?
  
19. When drawing a Lewis dot structure, the dots represent what?
  
20. What is kinetic energy? What is an example of kinetic energy?

21. What is potential energy? What is an example potential energy?
22. What are the end results of a combustion reactions
23. Early settlers depended this material for all of their energy needs?
24. Later on \_\_\_\_\_ was used to power trains.
25. Prior to electricity \_\_\_\_\_ were used to provide light in homes.
26. List three alternative energy sources that are not fossil fuels.
27. What is biomass? What are two examples of biomass fuels?
28. Are atmosphere is primarily composed of which gas?
- Life on earth depends on which atmospheric gas?
29. What would be the best description of the air we breathe?
30. What is STP?

31. Define pressure?

32. What is standard atmospheric pressure at sea level?

33. How is pressure measured?

34. What units are pressure measured in?

35. What happens to pressure and temperature as altitude increases?

36. Describe the movement of the particles and the attraction of the particles in a:

a. Solid

b. Liquid

c. Gas

37. What are the advantages and disadvantages of ceramics?

38. What are the advantages and disadvantages of plastics?

39. Answer the following questions about figure 3.4 on page 214.

a. Where is the largest concentration of oil found?

b. Which country is responsible for the largest consumption of oil?