Chapter Questions

Students should read each chapter and answer the chapter questions listed below. Come prepared to discuss in class. Please refer to your lesson plan or D2L to determine when chapter questions are due.

Chapter 2: Safety in Welding (Oxyfuel Topics)

1. Name four major industries that use welding.
2. List at least four (4) pieces of personal protective equipment.
3. What lens shade is required for brazing? Medium gas welding?
4. List the three burn classifications. Which is the worse burn? What can be done to aid in a first or second degree burn?
5. Name three (3) types of respirators. Which one is most commonly used or typical in a welding environment?
6. What are the two (2) types of ventilation strategies? Give an example of each.
7. What type of work clothing material is preferred in a welding environment? What type of work clothing materials should be avoided and why?
8. What should be done with butane lighters or matches when entering a weld shop? Why? Can a Zippo type lighter be carried on your person in a weld shop?
9. What precautions must be taken when welding on drums, tanks, vessels or other containers?
10. Name at least four safety requirements when welding in a confined space.
11. How should cylinders be stored? What precaution should be taken when storing oxygen and fuel gas cylinders?
12. List the four (4) types of fire extinguishers. Which type would be best for electrical fires?
Chapter 17: Oxyfuel Welding and Cutting Equipment, Setup, and Operation

1. List the five (5) main components that make up an oxy-fuel welding unit?
2. What two (2) functions do the regulators serve?
3. What is the purpose of the safety release valve on the regulator?
4. Typically, what colour are oxygen hoses? Acetylene hoses? Which has left handed threads?
5. Why should oil or grease never be used on or near a regulator?
6. What can be used to clean the orifice (hole) of a torch tip?
7. Describe a backfire? What do you see and what do you hear?
8. Describe a flashback? What do you hear and what do you see? Which torch valve is turned off first when you experience a flashback? Why?
9. What is the typical pressure of a full tank of oxygen?
10. Where is the safety device located on a tank of oxygen? Do the enclosed discs melt or burst?
11. Where are the safety devices located on an acetylene tank? Do the plugs melt or burst?
12. Inside an acetylene tank - What liquid is used to prevent the danger of explosion and allow large quantities of gas to be stored? What is the pressure of a full tank of acetylene?
13. What is the maximum working pressure for acetylene?
14. What should be used to light a torch?
15. What are the three flame types? Which is most often used for oxy-fuel welding?
16. How is an oxidizing flame achieved and why is it a problematic flame type (i.e. why is it not used)?

Chapter 17-2: Oxyfuel Gases and Filler Metals

1. What are the four main fuel gases used in oxyfuel welding and cutting?
2. How is the tank contents determined (i.e. what type of gas is in the tank)?
3. What three (3) forms is oxygen available?
4. What process is used to produce oxygen?
5. Which fuel gas produces the hottest flame? Which has the highest BTU value?
6. What two (2) elements are fused together to form Calcium Carbide? What gas is produced when Calcium Carbide is introduced to water?
7. What is the maximum working pressure for acetylene?
8. Why does propane make an excellent gas for heating and cutting?
9. Why should neoprene gloves be worn to handle propane?
10. Define RG45.
Chapter 19: Soldering, Brazing, and Braze Welding Process

1. Name three (3) similarities between soldering and brazing. Name one difference.
2. At what temperature does soldering take place? Brazing?
3. List four (4) advantages of soldering and brazing?
4. What is the major difference between brazing and braze welding?
5. What is meant by "Capillary Action"?
6. Which process requires a snug fitting joint, soldering or braze welding? Why?
7. What is meant by "Tensile Strength"? "Shear Strength"?
8. What are the major functions of flux?
9. Name three (3) forms that flux can be purchased?
10. List one (1) type of solder flux and braze flux.
11. Name three (3) soldering and brazing methods.
12. List three (3) of the criteria used for filler metal selection.
13. What type of braze filler metal is BCuZn and what metals can it be used on?

Chapter 21: Oxyacetylene Cutting

1. Describe the basic principle of oxyfuel cutting.
2. List four (4) common gases used with the oxyfuel cutting process.
3. What safety items must be worn when flame cutting?
4. List five safety precautions that should be observed with flame cutting operations.
5. What is the function of the lever on a cutting attachment?
6. When flame cutting with fuel gases other than acetylene, what part of the cutting torch must be changed and is of a different type and design than that used with acetylene?
7. What determines the proper tip size for the work at hand?
8. Briefly describe the steps used to initially pierce a hole.
9. When adding a cutting attachment to a welding torch, which oxygen supply valve must be fully opened?
10. Why must the high cutting-oxygen pressures at the regulator always be changed when changing from a cutting to a welding operation?
11. What does the word “kerf” mean?