**Chapter Questions for “Napoleon’s Buttons”**

**Introduction and Chapters 1-3**

**Introduction**

1. Explain in 3-4 sentences how New York got its name.
2. Explain how nutmeg may have helped protect people from The Black Death.
3. Define a molecule.
4. Define an “organic compound”.
5. Which atoms are most prevalent in organic compounds?
6. Define “aromatic” as it applies to chemistry.

**Chapter 1: Peppers, Nutmeg, and Clover**

1. Describe the different production methods for black, white, and green pepper.
2. Explain how pepper was originally used by the Greeks. When and why did it gain importance as a spice?
3. How did the popularity of pepper initiate “The Age of Discovery”?
4. What causes the sensation from pepper, chili peppers, and ginger that we call “hotness”? Include a description of the chemical structures that are similar.
5. What is thought to be the reason that humans like hot foods?
6. How might the lure of spices be responsible for the beginning of capitalism?
7. What benefits do these molecules provide to plants?
8. Describe what each of the following spices provides medicinally to humans.
   1. Cloves
   2. Nutmeg
9. Why was nutmeg called “the spice of madness”? What compounds gave it these properties?
10. Explain the possible connections between Myristicin and Ecstasy. Be specific.
11. Why is sassafras no longer used in root beer?
12. What did refrigeration due to the spice trade? Explain.

**Chapter 2: Ascorbic Acid**

1. How did lack of ascorbic acid nearly end the Age of Discovery?
2. How did the creation of more seaworthy vessels increase the prevalence of scurvy among sailors?
3. Describe the food that was commonly found aboard a sailing ship.
4. What were some of the remedies used to combat scurvy (both successful and unsuccessful)?
5. Describe the first controlled clinical study of scurvy.
6. Why were precautions for scurvy widely ignored?
7. Who was Cook and what did he do to increase awareness of scurvy and further the prevention of this disease?
8. Why do humans need to eat foods containing vitamin C, but dogs do not?
9. Where was the first sample of ascorbic acid isolated from?
10. What is Clostridium botulinum? Where is it found? What connection does ascorbic acid have to this microbe?

**Chapter 3: Glucose**

1. How did glucose affect the slave trade? Why did it have this effect?
2. Define “isomers”.
3. Describe the formation of a sugar dissacharide.
4. Why is honey sweeter than sugar?
5. People who are lactose intolerant lack the enzyme to digest milk sugar. What is the name of this enzyme? Who is most at risk for lactose intolerance?
6. Why do sweet tastes appeal to humans as opposed to bitter tastes?
7. Where is the taste receptor for sweetness located on the tongue?
8. In the late 70s, some Austrian wine makers used antifreeze to give their wines a sweeter, more full-bodied taste. Why did this cause such a scandal? What makes antifreeze toxic? Why s it hard to detect antifreeze in wines? What common medical condition is caused by the toxin in antifreeze?
9. What are some common artificial sweeteners? What is the benefit of using these as opposed to sugar? What are some of the problems with artificial sweeteners?
10. How does sucralose differ from sucrose?
11. What are some problems with sweeteners from natural sources?