Carbohydrate Digestion
The following questions refer to Activity 1: Assessing Starch Digestion by Salivary Amylase.

1. At what pH did you see the highest activity of salivary amylase? _____ Why?

2. How do you know that the amylase did not have any contaminating maltose?

3. What effect did boiling have on enzyme activity? Why? ____________________________

4. Describe the substrate and the subunit product of amylase. ___________________________

The following questions refer to Activity 2: Assessing Cellulose Digestion.

5. Does amylase use cellulose as a substrate? Explain. _________________________________

6. Did freezing have an effect on the activity of amylase? Explain. _______________________

7. Do you think that the bacterial suspension contained the enzyme cellulase (an enzyme that digests cellulose)? Why or why not?

8. What is the substrate of peptidase? Explain, based upon your results. ___________________
Protein Digestion by Pepsin

The following questions refer to Activity 3: Assessing Protein Digestion by Pepsin.

9. At which pH did you see the highest activity of pepsin? ______ How does this correlate to the location of pepsin in the body? ________________________________

10. What effect did boiling have on pepsin? ________________________________

11. Was there any digested BAPNA contaminating the pepsin or deionized (DI) water? ______

   How can you tell? ________________________________

12. What is the substrate in this experiment? ________________________________

   What is the usual substrate for pepsin, and what subunits are formed with pepsin activity? ________________________________

13. What was the effect of decreasing the incubation time on the optical density results? ________________________________

14. What effect would decreased incubation temperature have on pepsin activity? Why? ________________________________

15. What was the significance of using 37°C for the incubation? ________________________________

Fat Digestion by Pancreatic Lipase and the Action of Bile

The following questions refer to Activity 4: Assessing Fat Digestion by Pancreatic Lipase and the Action of Bile.

16. Describe the activity of lipase with and without the addition of bile salts. Refer to Chart 4 for pH values. ________________________________

17. Is the activity of bile a chemical or a physical process? Explain. ________________________________
18. What pH resulted in the maximum pancreatic lipase activity? ________________________________
   How does this optimal pH correlate to the enzyme’s location in the body? ____________________

19. Explain whether or not we can determine fat hydrolysis in tube 5. Why or why not?
   ________________________________________________________________________________

20. What is the substrate in this experiment? ____________________________________________
    What subunits does lipase form? ____________________________________________________

Physical Process: Mechanisms of Food Propulsion and Mixing
The following questions refer to Activity 5: Studying Mechanisms of Food Propulsion and Mixing: Deglutition (Swallowing).

21. Explain the significance of the movement of the tongue during swallowing. ______________
    ________________________________________________________________________________

22. Describe three events that occur during the pharyngeal-esophageal phase of deglutition. ______________
    ________________________________________________________________________________
    ________________________________________________________________________________

23. What was the time interval that you recorded between the first and second sound?
    __________