Investigating Enzymes: Pineapple in Gelatin

Introduction: In this experiment, an attempt was made to… (10 points)

Read separate background information on the enzymes in pineapple and why they could disturb the gelling effect of gelatin. In this experiment you will make unflavored gelatin and attempt to add fresh pineapple chunks to it. You will use fresh pineapple that has been frozen and some that has been boiled to determine the effect on gelatin. You will also attempt to set a cup of gelatin that contains no pineapple.

Hypothesis: After you have read the background information on this topic and your procedures, what do you predict will be the outcome of this experiment? (5 points)

Procedure: For your lab report, write a paragraph summary of your experimental design in past tense. (10 points)

Preparation:

A. Measure 20mL of water in a graduated cylinder, pour into a plastic cup. Use a pen to mark the water line. Empty the water into the sink. Repeat for each of 4 plastic cups.
B. Label your cups. #1: Gelatin only #2: Fresh pineapple #3: Frozen pineapple #4: Cooked pineapple
C. Obtain similarly sized pieces of each type of pineapple listed above. Pat all pieces dry, except 1 piece of fresh pineapple that will need to be cooked.
   -*Optional*: Use a scale to measure each piece of pineapple to be sure each piece is within .2g of the same mass.
D. Cooked pineapple: Place 1 piece of fresh pineapple into a clean dry test tube. Cover the tube with plastic. Using a test tube holder, set the test tube into a hot water bath, for 6 minutes (watch the clock). Once cooked, dump the pineapple onto a sheet of paper towel to cool. Pat the pineapple dry.

Experiment:

1. Measure 50mL of cold water (no ice) in a graduated cylinder. Pour into a glass beaker.
2. Add 1 packed of unflavored gelatin. Stir well. Allow to sit for 60sec.
3. Measure 50mL of hot water in a graduated cylinder. Add to the beaker. Stir well.
4. Pour gelatin mixture into each cup, up to the line you drew in preparatory step A. **Be sure you have emptied the water from the cup before adding gelatin.**
5. Add the correct piece of pineapple to each cup—see the labels you wrote in preparatory step B.
6. Set your cups aside and allow them to congeal.

Clean Up:

1. Rinse your beaker and graduate VERY well. Use your finger to rub the inside of the beaker removing any left over gelatin from the sides.
2. Wipe your workspace with a wet paper towel.
3. Put all materials back where they originated.

Data and Results: (20 points)

Make a **chart** to compare the degree to which your gelatin set. Your chart should contain the mass of the pineapple in each cup and specific terminology to describe the degree to which the gelatin set. For each, compare to the cup of gelatin only. Terms like firm, soft, and liquid, should be used in your descriptions.

Conclusions: 2-3 organized paragraphs. PROOFREAD! (40 points)

A. What is gelatin—what chemical compounds does it contain, how does it work?
B. What is in pineapple that can interfere with the gelling effect of gelatin? Why does this happen?
C. Was this a controlled experiment? Explain why or why not? What were the variables?
D. Discuss your results, why do you think you obtained these results? Discuss why you hypothesized as you did. Give information about heating and freezing enzymes and the effects thereof.
E. Describe a way you could extend this experiment.

Sources: List the websites, URL and Heading, you used for your introduction and conclusions. (5 points)

(10 points: Must be typed, neatly formatted, directions followed, and proofread.)