Experiment No. 5

**Selective protection of C-5 and C-6 hydroxyl groups of L-ascorbic acid with acetone**

**Aim**: Acetonide protection of L-ascorbic acid

**Chemical**: L-ascorbic acid, Dry acetone, Acetyl chloride, Hexane

**Apparatus**: 50 mL round bottom flask, 250 mL conical flask, separating funnel, funnel, filter   
 paper, stir bar, hot plate.

**General procedure:**

Add dry acetone (4 mL, 5.5 mmol) and dry acetyl chloride (100 μL, 1.5 mmol) into a 100 mL Erlenmeyer flask containing powdered L-ascorbic acid (1.0g, 5.5 mmol).

Stir the reaction mixture at room temperature for 4 hours.

Filter the precipitate.

Wash the reaction mixture 3 times with hexane.



**Result**: The product obtained was:

1.

2.

3.

4.

5.

Yield (%):

IR:

TLC:

Questions:

1. Draw the mechanism of your reaction?

2. Give three examples of protection and de-protection reaction? Explain by drawing.