

LAB Assignment 2

A meteorological station records the temperature at specific hours of the day. The data is given as:

$$\text{Time (hours)} = [0, 6, 12, 18, 24]$$

$$\text{Temperature (}^{\circ}\text{C)} = [15, 10, 20, 25, 18]$$

Tasks:

1. Use Newton's Divided-Difference method to find the interpolating polynomial for the given data. **(40)**
2. Evaluate the polynomial to estimate the temperature at 3 a.m., 9 a.m., and 21 p.m. **(15)**
3. Plot the polynomial over the range $0 \leq t \leq 24$ and overlay the original data points. **(25)**