

# Military Institute of Science and Technology

Department of Computer Science & Engineering

Course: Numerical Analysis Sessional (CSE – 214)

## Assignment No.-02

**Name of the Exp: Interpolating a table of data by Newton's forward and backward difference interpolation formula, Lagrange's Interpolation formula.**

### **Problem:**

1. Clara wants to arrange a house warming party at her new home in Denver. She wants to place the order for foods to a nearby catering. The catering provided her some data of the costing for foods as per the number of people which is given in the table below.

Now Clara wants to make an interpretation of what would be the cost if she wants to order food for exactly 18 people. But she is confused which method to follow for finding the cost! Thus, you have to help Clara.

Write a program to find whether the data points in the table can be used to find function value at  $x=18$  using Newton's Interpolation formulae or not. If yes, use Newton's backward difference interpolation formula and if not use Lagrange's interpolation formula for finding cost for 18 people.

No. of people (x)	4	5	7	9	14
Cost in \$ (y)	15	20	30	45	65