**MAWLANA BHASHANI SCIENCE AND TECHNOLOGY UNIVERSITY**

SANTOSH, TANGAIL-1902



DEPARTMENT OF INFORMATION AND COMMUNICATION TECHNOLOGY

**Course Title: Computer Based Numerical Method Lab**

**Course Code: ICT-2102**

**Lab Report on: Lagrange Interpolation Technique.**

**Lab Report No: 06**

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| Submitted By | Submitted To |
| Name: Kuldip Saha Mugdha  ID: IT-22018  2nd Year, 1st Semester  Session: 2021-2022  Dept. of ICT, MBSTU | Dr. Mst. Nargis Akter  Professor  DEPARTMENT OF INFORMATION AND COMMUNICATION TECHNOLOGY  MAWLANA BHASHANI SCIENCE AND TECHNOLOGY UNIVERSITY |

**Date of Performance:**

# Date of Submission:

**Experiment no:** 06

**Experiment name:** Lagrange Interpolation Technique.

**Objective:** The objective of this lab report is to use Lagrange interpolation to find the interpolating polynomial for the given set of data points and evaluate the interpolation at specified points.

**Materials:** MATLAB

**Code:**

x=[.4 .5 .7 .8]; y=[-.916 -.693 -.357 -.223];

sum=0;

a=.6;

for i=1: length(x)

u=1; l=1;

for j=1:length(x)

if j~=i u=u\*(a-x(j));

l=l\*(x(i)-x(j));

end

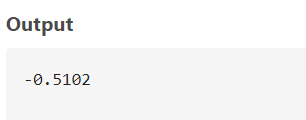
end

sum=sum+u/l\*y(i);

end

disp(sum);

**output:**

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**Discussion:** The Lagrange interpolation technique was successfully implemented in MATLAB to obtain the interpolating polynomial for the given data points. The resulting polynomial was used to interpolate the function at an arbitrary point, demonstrating the method's effectiveness in estimating values based on known data.