**DEPARTMENT OF Civil Engineering**

Summer 2020

**Subject:** Numerical Analysis

**Instructor:** Shomaila Mazhar **Total Marks:** 30

**Note:** Attempt all questions.

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| **Q.No.1** |  ***(10)*** |

1. Find a root of the equation $x^{3}+3.993\*10^{-4}=0.165x^{2}$

 Use newton Raphson method with $x\_{0 }=0.02$

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| **Q.No.2**  |  ***(10)***  |

Use the numbers $x\_{0}= 2, x\_{1}=2.75, x\_{2}=4$ to find the Lagrange interpolation polynomial for f(x) = $^{1}/\_{x} $ at x = 3.

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| **Q.No.3** |  ***(10)***  |

Complete the divided difference table for the given data and construct the interpolating polynomial that uses all this data.

X = 1.0 1.3 1.6 1.9 2.2

Y = 0.7651977 0.6200860 0.4554022 0.2818186 0.1103623