Mid-Term Examination (18-10-2021)

Class: B.E. (chem.)-MBA & B.E. (FT) 5th Sem.

Subject: Numerical Methods in Chemical Engineering

Max. Marks: 25 **Time allowed: 1 hr**

Note: Attempt all questions

1. Find a real root of $x^3 - 3x + 1 = 0$ correct to 3 decimal places using Newton-Raphson method.

(5)

2. Use Lagrange's interpolation formula to find the value of y when $x = 10$, if the following values of x and y are given

x	5	6	9	11
y	12	13	14	16

(5)

3. Using Gauss's backward difference formula find y(8) from the following table

x	0	5	10	15	20	25
y	7	11	14	18	24	32

(10)

4. Using Regula-Falsi method compute the real root of the following equation correct to 3 decimal places $\cos x = 3x - 1$

(5)