**BCH10**

**Fourth Semester B. Tech Chemical Engineering**

**Examination Aug/Sep-2015**

**Numerical Methods**

**Time:-3Hours Max. Marks:-75**

**SECTION-A**

**Answer any five questions. (5\*5)**

1. Distinguish between Analog & Digital Computers.
2. Show that the following system of equations is ill-conditioned for computing the point of intersection when m1& m2 is nearly equal.

y=m1x+c1

y=m2x+c2

1. What are blunders? How can we minimize them?
2. Solve the following equation

2x1+x2=25

2.01x1+x2=25.01

1. Distinguish between round off errors & truncation errors.
2. Briefly write about numerical differentiation.
3. What is a boundary-value problem?

**SECTION-B**

**Answer any two questions. (10\*2)**

1. Solve the following system of equations by the process of elimination.

3x+2y+z=10

2x+3y+2z=14

x+2y+3z=14

1. Use the false position method to find a root of the function

F(x) =x2-x-2=0

In the range 1<x<3.

1. Solve the set of equations given below by Jacobi method.

3x1-6x2+2x=15

4x1-x2+z=2

X1-3x2+7z=22

**SECTION-C**

**Answer any two questions. (15\*2)**

1. What are personal computers? How are they different from microcomputers?
2. Give an example to show that the distributive law of arithmetic is not always satisfied in numerical computing.
3. Describe Horner’s rule. How does it improve the accuracy of evaluation of a polynomial?