JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY, WAKNAGHAT

T2 EXAMINATIONS, OCTOBER-2019

B.Tech III Semester (Civil Branch)

Course Code: 18B11MA311   MAX. MARKS: 25

Course Name:Numerical Methods   MAX. TIME: 1.5 Hours

Course Credits: 03

Note: All questions are compulsory. Carrying of mobile phone during examinations will be treated as case of unfair means. Each question carry equal marks.

Q1.Compute the root of equation $\sin x + \cos x = 1$ using Regula-Falsi method correct up to 4 decimal places. The root of the equation lies in the interval $[1,2]$

Q2. Solve the system of equations using Gauss-Seidel method.
$$x_1 + 10x_2 + x_3 = 6$$
$$10x_1 + x_2 + x_3 = 6$$
$$x_1 + x_2 + 10x_3 = 6$$

Q3.Find the polynomial which takes the following values

x	0	1	2	3	4	5
$f(x)$	41	43	47	53	61	71

Q4.Find the value of y when $x = 0.37$ using the given values and Newton backward interpolation formula.

x	0	0.10	0.20	0.30	0.40
y	1	1.2214	1.4918	1.8221	2.2255

Q5.Use appropriate formula to evaluate $f(6)$,given

x	5	7	11	13	21
$f(x)$	150	392	1452	2366	9702