

## Assignment 1

1. Perform the Bisection method upto 50 iteration and find the value of  $\sqrt{2}$ . Also write your output in the table given below

Iteration	$a$	$b$	$c = \frac{a+b}{2}$	$f(a)$	$f(b)$	$f(c)$
0						
1						
2						
:						
50						

2. Use the bisection method to find the root of  $\cos x = xe^x$ , accurate to at least 7 significant digits. Use the following stopping criterion.

- (a) Absolute error
- (b) Relative error
- (c) Functional value

	$a$	$b$	Approximate value of root	No of Iteration required
Absolute Error				
Relative Error				
Functional value				

3. Take the initial guess  $x_0$  as a mid point of  $[a, b]$  and repeat the question no. 2 for fixed point iteration method.

	$a$	$b$	$x_0$	Approximate value of root	No. of Iteration required
Absolute Error					
Relative Error					
Functional value					

4. Write your comments/observations regarding the above methods/results.

\* \* \* \* \* End \* \* \* \* \*