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MATRIC NO 151ENG021017
DEPT COMPUTER ENGINEERING
COURSE ENG382 [ENGINEERING MATHEMATICS IV]

ASSIGNMENT ONE

1. $f(y) = \cos(y)$

$$\cos y = 0$$

$$y_{i+1} = \cos y_i + y_i$$

With guess value of $y = 0.05$

$$y_{i+1} = \cos(0.05) + 0.05$$

$$= 1.0500$$

when $y_i = 1.0500$

$$y_{i+1} = \cos(1.05) + 1.05$$

$$= 2.0498$$

when $y_i = 2.0498$

$$y_{i+1} = \cos(2.0498) + 2.0498$$

$$= 3.04916$$

when $y_i = 3.04916$

$$y_{i+1} = \cos(3.04916) + 3.04916$$

$$= 4.0477$$

when $y_i = 4.0477$

$$y_{i+1} = \cos(4.0477) + 4.0477$$

$$= 5.0452$$

QUESTION TWO

2. $f(z) = e^{-15z} - 2 + \cos(z)$

$$e^{-15z} - 2 + \cos(z) = 0$$

$$z = e^{-15z} + \cos(z)$$

$$z_{i+1} = e^{-15z_i} + \cos(z_i)$$

with a guess value of $z = 0.1$

$$z_{i+1} = e^{-15(0.1)} + \cos(0.1)$$

$$= 1.2231$$

when $z_i = 1.2231$

$$z_{i+1} = e^{-15(1.2231)} + \cos(1.2231)$$

$$= 0.9998$$

When $z_1 = 0.9998$

$$z_{1+1} = e^{-15(0.9998)} + \cos(0.9998) \\ = 0.99985$$

When $z_1 = 0.99985$

$$z_{1+1} = e^{-15(0.99985)} + \cos(0.99985) \\ = 0.99985$$

When $z_1 = 0.99985$

$$z_{1+1} = e^{-15(0.99985)} + \cos(0.99985) \\ = 0.99985$$