

YAKUBU NATHAN BALA

17/EN/04/076

ELECT

ASSIGNMENT

- MATLAB:

- Command window

- Clear

- Clc

- format long g

- Y = 0.5

- for i = 1:100

- iter(i+1) = i;

-  $Y(i+1) = \frac{\sqrt{Qr + \left( \left( 500 + (\log(v(i))) \right)^3 \right) - (34.3 + (0.02 * Y(i)))}}{0.3}$

-  $Ea(i+1) <= 1E-11$

- break

- end

- [iter 'Y' 'Ea']

- Plot [Y, iter]

- axis tight

- grid on

- grid minor

iter	V	Ea
0	0.5	0
1	239.05	99.751
2	294.17	18.736
3	302.16	2.7895
4	303.85	0.40995
5	304.04	0.60157
6	304.06	0.0088241
7	304.07	0.0019244
8	304.07	0.0019244
9	304.07	$0.9635e^{-12}$

Converging at iter = 7, give Y = 304.07

∴ the Converging Value is seen to be 304.07

$$T_2 = \frac{0.3 \cdot y^2}{500 + (\ln y)^3} - 0.02y$$

$$\text{If } y = 304.07$$

$$\text{∴ } T_2 = 9.8 \times 3.8 = 34.3$$

$$= \frac{0.3 \times (304.07)^2}{500 + (\ln 304.07)^3} - 0.2(304.07)$$

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$$= 34.3$$