NAME: OLUTAYO AYODEJI SAMUEL

MATRIC NO: 17/ENG05/034

DEPARTMENT: MECHATRONICS ENGINEERING

**ENGINEERING MATHS (ENG284) –ASSIGNMENT VI**

**MATLAB CODES**

1-commandwindow

2-clear

3-clc

4-close all

5-t = 0:1:60

6-T = 25 - 15\*exp(-0.22\*t)

7-plot (t , T)

8-grid on

9-grid minor

10-xlabel ('Time(secs)')

11-ylabel ('Temperature(c)')

**OUTPUT**

t =

Columns 1 through 21

0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20

Columns 22 through 42

21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41

Columns 43 through 61

42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60

T =

Columns 1 through 12

10.0000 12.9622 15.3395 17.2472 18.7783 20.0069 20.9930 21.7843 22.4193 22.9290 23.3380 23.6662

Columns 13 through 24

23.9296 24.1410 24.3106 24.4468 24.5560 24.6437 24.7141 24.7705 24.8158 24.8522 24.8814 24.9048

Columns 25 through 36

24.9236 24.9387 24.9508 24.9605 24.9683 24.9746 24.9796 24.9836 24.9869 24.9895 24.9915 24.9932

Columns 37 through 48

24.9945 24.9956 24.9965 24.9972 24.9977 24.9982 24.9985 24.9988 24.9991 24.9992 24.9994 24.9995

Columns 49 through 60

24.9996 24.9997 24.9997 24.9998 24.9998 24.9999 24.9999 24.9999 24.9999 24.9999 25.0000 25.0000

Column 61

25.0000

**GRAPHICAL REPRESENTATION**

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**MICROSOFT EXCEL SPREADSHEET**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| t(sec) | T |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 0 | 10 |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 1 | 12.96222 |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 2 | 15.33945 |  |  |  |  |  | | | | | | | | |
| 3 | 17.24723 |  |  |  |  |
| 4 | 18.77826 |  |  |  |  |
| 5 | 20.00693 |  |  |  |  |
| 6 | 20.99297 |  |  |  |  |
| 7 | 21.78428 |  |  |  |  |
| 8 | 22.41933 |  |  |  |  |
| 9 | 22.92896 |  |  |  |  |
| 10 | 23.33795 |  |  |  |  |
| 11 | 23.66618 |  |  |  |  |
| 12 | 23.92958 |  |  |  |  |
| 13 | 24.14097 |  |  |  |  |
| 14 | 24.31061 |  |  |  |  |
| 15 | 24.44675 |  |  |  |  |
| 16 | 24.55601 |  |  |  |  |
| 17 | 24.64369 |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 18 | 24.71405 |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 19 | 24.77052 |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 20 | 24.81584 |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 21 | 24.85221 |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 22 | 24.88139 |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 23 | 24.90482 |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 24 | 24.92361 |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 25 | 24.9387 |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 26 | 24.9508 |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 27 | 24.96052 |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 28 | 24.96832 |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 29 | 24.97457 |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 30 | 24.97959 |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 31 | 24.98362 |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 32 | 24.98686 |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 33 | 24.98945 |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 34 | 24.99154 |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 35 | 24.99321 |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 36 | 24.99455 |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 37 | 24.99563 |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 38 | 24.99649 |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 39 | 24.99718 |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 40 | 24.99774 |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 41 | 24.99819 |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 42 | 24.99854 |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 43 | 24.99883 |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 44 | 24.99906 |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 45 | 24.99925 |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 46 | 24.9994 |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 47 | 24.99952 |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 48 | 24.99961 |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 49 | 24.99969 |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 50 | 24.99975 |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 51 | 24.9998 |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 52 | 24.99984 |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 53 | 24.99987 |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 54 | 24.9999 |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 55 | 24.99992 |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 56 | 24.99993 |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 57 | 24.99995 |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 58 | 24.99996 |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 59 | 24.99997 |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 60 | 24.99997 |  |  |  |  |  |  |  |  |  |  |  |  |  |

**GRAPHICAL REPRESENTATION OF THE MODEL**