Q.P. Code: 16EC443 **R16**

Reg. No: | | | | | | | | | | |

SIDDHARTH INSTITUTE OF ENGINEERING & TECHNOLOGY:: PUTTUR

(AUTONOMOUS)

B.Tech IV Year I Semester Regular & Supplementary Examinations Feb-2021

MATLAB PROGRAMMING

(Common to All)

Time: 3 hours Max. Marks: 60

(Answer all Five Units **5 x 12 = 60** Marks)

UNIT-I

1 **a** Discuss about script file and function file in writing matlab program with examples. **6M**

b Use MATLAB to solve the following set of equations. **6M**

$6x - 4y + 8z = 112$

$-5x - 3y + 7z = 75$

$-5x - 3y + 7z = 75$

OR

2 **a** Explain about Commands for managing the work sessions. **6M**

b Write MATLAB commands to Plot the polynomial $y=x^3+13x^2+52x+3$ over the range $-7 \le x \le 1$. **6M**

UNIT-II

3 **a** Explain about concept of cell array, and create a 2 × 2 cell array A, whose cells contain the location, the date, the air temperature (measured at 8 A.M., 12 noon, and 5 P.M.), and the water temperatures measured at the same time in three different points in a pond. The cell array looks like the following. **8M**

Walden Pond	June 13, 1997
[60 72 65]	$\begin{bmatrix} 55 & 57 & 56 \\ 54 & 56 & 55 \\ 52 & 55 & 53 \end{bmatrix}$

b Write brief description about multidimensional array with some examples. **4M**

OR

4 **a** The maximum height h achieved by an object thrown with a speed at an angle 'θ' **7M**

to the horizontal, neglecting drag, is $h = \frac{v^2 \sin^2\theta}{2g}$

V = 10, 12, 14, 16, 18, 20 m/s $\theta = 50°, 60°, 70°, 80°$.

The rows in the table should correspond to the speed values, and the columns should correspond to the angles.

b Using MATLAB commands to confirm that **5M**

$$\frac{12x^3 + 5x^2 - 2x + 3}{3x^2 - 7x + 4} = 4x + 11$$

UNIT-III

5 **a** Explain briefly about Matlab Trigonometric and Hyperbolic Function. **6M**

b Write about Finding the Zeros of a Function. **6M**

OR

6 **a** Write brief note about User defined functions in MATLAB. **5M**

b Describe about control-flow structures frequently used in MATLAB programming. **7M**

UNIT-IV

7 **a** Explain about for Loop and While loop. **6M**

b Write a short note about Algorithms. **6M**

OR

8 **a** Suppose that x = [-9, -6,0, 2,5] and y = [-10, -6, 2, 4, 6]. What is the result of the following operations? Determine the answers by hand, and then use MATLAB to check your answers. **6M**

a. z = (x < y)
b. z = (x > y)
c. z = (x ~= y)
d. z = (x == y)
e. z = (x > 2)

b Explain about conditional statements. **6M**

UNIT-V

9 **a** Explain about axis commands in MATLAB. **6M**

b Explain about Interactive Plotting in MATLAB. **6M**

OR

10 **a** Explain about XY plotting Functions. **6M**

b Write MATLAB code for **6M**
(i) meshz plot (ii) waterfall plot

*** END ***