O.P.Code: 20EC0454	R20	H.T.No.									

SIDDHARTH INSTITUTE OF ENGINEERING & TECHNOLOGY:: PUTTUR
(AUTONOMOUS)

B.Tech. IV Year I Semester Regular & Supplementary Examinations December-2024
MATLAB PROGRAMMING
(Open Elective (OE) – IV)

Time: 3 Hours **Max. Marks: 60**

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

UNIT-I

1	a	What are the menus and tool bars available in MATLAB and Explain with suitable diagram.	CO3	L2	6M
	b	How to debugging the script files in MATLAB?	CO1	L3	6M

OR

2	a	Illustrate the MATLAB Default Desktop Window and Explain each interactive session.	CO2	L3	6M
	b	Plot the following functions y = $\sqrt{x}$ and z=4 sin3x for 0≤X≤5 in MATLAB.	CO2	L1	6M

UNIT-II

3	a	Distinguish between array multiplication and matrix multiplication with an example.	CO2	L2	6M
	b	What is an array? Write short notes on one dimensional and two-dimensional array with an example for each.	CO1	L2	6M

OR

4	a	What is structure array? How does it differ from ordinary arrays and cell arrays?	CO2	L1	6M
	b	Describe about MATLAB array and discuss about the following functions with examples used in MATLAB program: (i) Zeros ( ). (ii) Ones ( ). (iii) Eye ( ).	CO1	L1	6M

UNIT-III

5	a	Explain how Trigonometric Functions and Hyperbolic Functions are handled by MATLAB. Give some examples.	CO2	L2	6M
	b	Explain the following MATLAB commands with suitable examples. i) The round function, ii) The ceil function, iii) The floor function.	CO3	L5	6M

OR

6	a	Discuss about Exponential and Logarithmic Functions in elementary mathematical function with appropriate commands.	CO3	L3	6M
	b	What is mean by functions? Explain various types functions in MATLAB with suitable example.	CO1	L1	6M

UNIT-IV

7	a	Explain about Conditional Operations with suitable example.	CO5	L2	6M
	b	Plot the equation $y= 0.4\sqrt{1.8}$ for $0 \leq x \leq 35$ and $0 \leq y \leq 3.5$.	CO5	L1	6M

OR

8	a	Explain "else" and "elseif" Statement in MATLAB With suitable flow chart.	CO1	L2	6M
	b	Write a script file to compute the sum of the first 15 terms in the series $5k^2 - 2k$, $k=1, 2, 3, \ldots, 15$.	CO1	L2	6M

UNIT-V

9	a	For what values of C will the following set (i) have a unique solution and (ii) Have an infinite number of solutions? Find the relation between x_1 and x_2 for these solutions. $6x_1 + Cx_2 = 0$, $2x_1 + 4x_2 = 0$.	CO4	L2	6M
	b	Define Rank of Matrix with suitable example.	CO1	L1	6M

OR

10	a	Explain Underdefined and Overdetermined Systems with an example.	CO1	L2	6M
	b	Use MATLAB to solve the following equations for x, y, and z as $x - 5y - 2z = 11c$, $6x + 3y + z = 13c$, $7x + 3y - 5z = 10c$ Plot the solutions for x, y, and z versus c on the same plot, for $-10 \leq c \leq 10$.	CO3	L4	6M

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