Mid-Term 2 Examination
SVKM'S NMIMS
STME, NAVI-MUMBAI, Academic Year: 2022-2023

Program: BTech CSBS	Subject: IT Workshop/MATLAB
Stream: Computer Engineering	Date: 27-09-2022
Year: 4 Semester: VII	Time: 9:35 - 10:45 AM
No. of Pages: 1	Total Marks: 20

Instructions: Candidates should read carefully the instructions printed on the question paper and on the cover of the Answer Book, which is provided for their use.

1) All questions are compulsory.
2) Solve any 3 questions from Q2 to Q5.
3) Each question carries equal marks.
4) Answer to each new question to be started on a new page.
5) Figures in brackets on the right-hand side indicate full marks.
6) Assume Suitable data if necessary.

Q.No.	Statement of the question	CO/ BL	Marks
Q1 (a)	Give 2 advantages and 2 disadvantages of using MATLAB	CO1/ BL1,2	(2)
Q1 (b)	Write the function declaration of p(x) = sin(x) + x^3 Function name | Output Variable | Input variable | Description |	CO3/ BL1	(2)
Q1 (c)	Write a script to calculate the circumference of circle (C = 2πr). Name the script file as "circumference .m". Comment the script.	CO1,2/ BL1,2	(2)
Q1 (d)	Define the following functions: xlabel ('pipe length') | abs(x) | legend(str1, str2) | grid on | axis ('axis') | plot (x,y, 'c+') | help graph2D | rem(a,b) |	CO1,2/ BL1,2	(2)
Q2	Explain 4 features of MATLAB, each in 2 lines. Draw the schematic of MATLAB. List 2 operators that MATLAB allows.	CO1/ BL1,2	(4)
Q3	Write the code for the simple function, y = x for the range of values for *x* from 0 to 100, with an increment of 5. Draw the output graph, titled as "Straight line graph", label x axis and y axis as "x" and "y", indicate tick marks.	CO1,2/ BL1,3	(4)

Q4	Code to generate the overlay plot is given below. Write the script file of the given code.
	`x = linspace(0,2*pi,100);`
	`y1 = sin(x);`
	`plot(x,y1)`
	`hold on`
	`y2 = x; plot(x,y2,'--')`
	`y3 = x - (x.^3)/6 + (x.^5)/120;`
	`plot(x,y3,'o')`
	`axis([0 5 -1 5])`
	`hold off`
		CO1,2/ BL2,3	(4)

Q5	Write an **input** statement that will prompt user for real numbers, and store it in variable. Then, use **fprintf** function to print the value of this variable using 2 decimal places.	CO1,2/ BL1,2,3	(4)