Reg. No.															

Question Paper Code	13834

B.E. / B.Tech. - DEGREE EXAMINATIONS, NOV / DEC 2025

Seventh Semester

Computer Science and Business Systems

20CBPW702 - IT WORKSHOP SKY LAB / MAT LAB

Regulations - 2020

Duration: 3 Hours Max. Marks: 100

PART - A (MCQ) (10 × 1 = 10 Marks)

Answer ALL Questions

		Marks	K – Level	CO
1.	Which of these is not an aspect of a for/while loop? (a) update (b) initialization (c) runner (d) condition	1	K1	CO1
2.	To display 'Question 2' in the command window, the correct command is (a) disp(Question 2) (b) display('Question 2') (c) disp('Question 2') (d) Question 2	1	K1	CO1
3.	The num2str command (a) converts a number to string (b)converts string to a number (c) concatenates numbers and strings (d) concatenates strings	1	K1	CO2
4.	What function will be returned as a symbolic matrix? (a) F - Resulting matrix (b) f – Function (c) A - Output matrix (d) A - Input matrix	1	K1	CO2
5.	What happens if we don't stop the implementation of the hold function? (a) Nothing happens (b) MATLAB keeps on generating multiple plots in the same window (c) Error is generated (d) Plot function won't work	1	K1	CO3
6.	Which toolbox provides the plot command? (a) Symbolic Maths Toolbox (b) Signal Processing Toolbox (c) Engineering Toolbox (d) Functions	1	K1	CO3
7.	What does the echo command do? (a) It echoes (b) It shows the comments present in Script files (c) It shows the commands and comments in MAT-files (d) It shows the commands and the comments in M-files	1	K1	CO4
8.	How to introduce a title to describe the subplots generated in MATLAB? (a) Use a function (b) Use the title function (c) Use the legend function (d) Use uipanel()	1	K1	CO4
9.	The dbquit command, if placed in an m.file, will _____ (a) never run the debugging mode (b) exit from the debugging mode (c) result in an error while running the function (d) dbquit does not exist	1	K1	CO5
10.	The h command would provide us with a: (a) Description of all commands (b) list of those commands that start from h (c) Display of all the programs (d) Display of the command's short description	1	K1	CO5

PART - B (12 × 2 = 24 Marks)

Answer ALL Questions

11.	Compare and contrast script, function in MATLAB.	2	K2	CO1
12.	What MATLAB function is used with format floating-point numbers for display?	2	K1	CO1
13.	Show a MATLAB code to create a vector of all even numbers from 2 to 100. Use the colon operator to do this.	2	K2	CO2

14.	How can you create a matrix filled with random values from a uniform distribution in the range [0, 1] in MATLAB?	2	K1	CO2
15.	What is the purpose of the legend function in MATLAB when creating a plot ?	2	K1	CO3
16.	Compare plot and scatter in MATLAB.	2	K2	CO3
17.	How can you plot a simple line graph in MATLAB?	2	K1	CO4
18.	Show the anatomy of a M-File function.	2	K2	CO4
19.	How can you set up a watchlist for monitoring specific variables during debugging?	2	K1	CO5
20.	What are the steps to be taken if a syntax error is encountered in your MATLAB code?	2	K1	CO5
21.	Given the code snippet **x = 1; y = 2; z = x + y; disp(x);** if you want to display the value of z instead of x, what correction should you make?	2	K1	CO1
22.	List the types of errors in MAT Lab.	2	K1	CO5

PART - C (6 × 11 = 66 Marks)

Answer ALL Questions

23.	a) (i)	Demonstrate a MATLAB function called **calculate Circle Area** that takes the radius as an input parameter and calculates the area of a circle. Define a local variable **pi** inside the function with the value **3.14.**	6	K2	CO1
	(ii)	Illustrate a script that accesses a global variable **globalVar** and print its value. Define **globalVar** with a value of **100** in the workspace.	5	K2	CO1
		OR			
	b) (i)	Explain how the MATLAB Command Window can be customized to display additional information, such as line numbers and timestamps.	6	K2	CO1
	(ii)	Explain with an example how to use error function to generate a custom error message in MATLAB.	5	K2	CO1
24.	a)	Identify a MATLAB function that generates a Toeplitz matrix T (n x n) based on a given vector of the first row/column. Test it with a vector [1, 2, 3, 4] and display the resulting T matrix.	11	K3	CO2
		OR			
	b)	Utilize the given matrix A = [2 7 9 7; 3 1 5 6; 8 1 2 5]. And solve t the following commands with suitable MAT Lab comings. A. convert A into a 4-by-3 array B. compute the reciprocal of each element of A C. compute the square-root of each element of A D. remove the second column of A E. add a row of all 1's at the beginning and at the end	11	K3	CO2
25.	a)	How to plot multiple data set in single graph, mention legend to classify the figures in the graph.	11	K2	CO3
		OR			
	b)	Write a MATLAB code to plot y=3 (x^3)-26x+10 for x lying between -2 to 4. Illustrate it's first and second derivative in the same plot.	11	K2	CO3
26.	a)	Build a menu driven MATLAB program which has the following options: 1. Factorial of a number. 2. Prime or not 3. Odd or even Outline all the possible options by taking number as input from the user.	11	K3	CO4
		OR			

	b)	Construct a histogram of 100 randomly distributed numbers between 0 to 1 and also Plot 3-D Contour lines for the function z=-5/(1+x^2+y^2) for |x|<=3 and |y|<=3.Demonstrate the same.	*11*	*K3*	*CO4*
27.	a)	Explain the importance of catching and error handling in MATLAB M-files.What are some best practices for efficient debugging in MATLAB?	*11*	*K2*	*CO5*
		OR			
	b)	Explain the purpose and various types of breakpoints in MATLAB debugging. What is the common error types encountered in MATLAB M-files?	*11*	*K2*	*CO5*
28.	a)	Demonstrate a MATLAB program that generates a magic square of size n x n, where n is an odd integer greater than 1. Display the magic square.	*11*	*K2*	*CO2*
		OR			
	b)	Explain the importance of matrices in MATLAB and provide examples of common operations involving matrices.	*11*	*K2*	*CO2*