CBCS SCHEME

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BEC358B

Third Semester B.E./B.Tech. Degree Examination, Dec.2025/Jan.2026
MATLAB Programming

Time: 2 hrs. Max. Marks: 50

Note: 1. Answer any FIVE full questions, choosing ONE full question from each module.
2. M : Marks , L: Bloom's level , C: Course outcomes.

		Module – 1	M	L	C
Q.1	a.	What is MATLAB? With neat diagram, explain the main features and capabilities of MATLAB.	5	L2	CO1
	b.	Write a MATLAB commands for the following expressions : i) $\frac{2^5}{2^5-1}$ ii) $3\frac{\sqrt{5}-1}{(\sqrt{5}+1)^2}$ iii) $\log_{10}(e^3)$ iv) $e^{\pi\sqrt{163}}$ v) $y = \text{Cos h}^2 x - \text{Sin h}^2 x$ with $x = 32\pi$	5	L2	CO1
		OR			
Q.2	a.	Explain briefly MATLAB windows.	5	L2	CO1
	b.	Write a MATLAB program to compute Area = πr^2 with $r = \pi^{1/3} - 1$ (π is P^i MATLAB)	5	L3	CO1
		Module – 2			
Q.3	a.	Explain the steps involved in creating and executing a script file.	5	L2	CO2
	b.	Write a MATLAB function to compute the factorial n! for any integer n. The input should be the number n and the output should be n!.	5	L3	CO2
		OR			
Q.4	a.	Write a MATLAB code to create a 4 × 4 matrix.	5	L3	CO2
	b.	With respect to the MATLAB script files, explain the commands : i) to see variables present in work spaces ii) to get more information about the variables and the workspace iii) to see the contents of an M – file without opening the file an editor iv) to look for M – files with keywords in their description v) to ask the user to input on the screen.	5	L2	CO2
		Module – 3			
Q.5	a.	Explain how to use publisher from the editor window with example.	5	L2	CO3
	b.	Create three anonymous functions corresponding the following expression $f(x) = x^4 - 8x^3 + 17x^2 - 4x - 20$ $g(x) = x^2 - 4x + 4$ $h(x) = x^2 - 4x - 5$	5	L2	CO3
		OR			

Q.6	a.	What are anonymous functions? Explain with example.	5	L2	CO3
	b.	Explain three different kinds of files for reading data into MATLAB's workspace.	5	L2	CO3
		Module – 4			
Q.7	a.	How to name variables, what is the precision of computation and how to recall previously typed command?	5	L2	CO4
	b.	Explain the steps in creating vector.	5	L2	CO4
		OR			
Q.8	a.	Write MATLAB command to i) Extract the diagonal of matrix A as a vector ii) Create an n by n zero matrix iii) Create an n by n matrix of ones iv) Create an n by n identity matrix v) Create an n by n matrix of random number	5	L2	CO4
	b.	Explain built – in functions of MATLAB.	5	L2	CO4
		Module – 5			
Q.9	a.	Describe the anatomy of function file in MATLAB and explain.	5	L2	CO4
	b.	Explain MATLAB control flow statements like for – loops , while loops and if – elseif – else branching with suitable examples.	5	L2	CO4
		OR			
Q.10	a.	Write a short note on MATLAB profiler.	5	L2	CO4
	b.	Explain the Recursion in MATLAB.	5	L2	CO4

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