CBCS SCHEME

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BEC358B

Third Semester B.E./B.Tech. Degree Examination, Dec.2024/Jan.2025
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.	Define MATLAB. Explain the arithmetic operators involved in MATLAB programming.	05	L2	CO1
	b.	Write the MATLAB commands and results of the following functions: (i) $e^{j\pi/4}$ (ii) $\frac{2^5}{(2^5-1)}$	05	L2	CO1
		OR			
Q.2	a.	Describe the array operations involved in MATLAB programming with an example.	05	L2	CO1
	b.	Calculate the following operations: (i) exp(Pi * sqrt(163)) (ii) (1 + 3 * i) / (1 – 3 * i) (iii) (sin(Pi/6))^2 * (cos(Pi/6))^2	05	L3	CO1
		Module – 2			
Q.3	a.	Summarize the user defined functions in MATLAB programming with an example.	05	L3	CO2
	b.	Generate a signal $y = e^{-0.4x} \sin x$, $0 \le x \le 4\pi$	05	L5	CO2
		OR			
Q.4	a.	Write a MATLAB code for plot y = cos x, and $z = 1 - \frac{x^2}{2} + \frac{x^4}{24}$ for $0 \le x \le \pi$	05	L2	CO2
	b.	Write the results of the following functions : (i) A = [1 2 3 ; 4 5 6 ; 7 8 9] (ii) B = linspace(0, 10, 5) (iii) C = [1 2 ; 3 4] and D = [1 1 ; 3 1] E = C * D ;	05	L2	CO2
		Module – 3			
Q.5	a.	Create a function $f(x) = x^3 - 3x^2 + x \log(x - 1) + 100$ and calculate f(0) and f(1) using MATLAB.	05	L3	CO3
	b.	Explain the symbolic computation with an example.	05	L2	CO3
		OR			
Q.6	a.	Describe the importing and exporting data with an example.	07	L2	CO3
	b.	Explain the Directories Files.	03	L2	CO3
		Module – 4			
Q.7	a.	Explain the following commands with an examples: (i) rand (ii) round (iii) eye (iv) diag (v) reshape	05	L2	CO4
	b.	Generate a 4×3 random matrix and replace first row to third row and first columns to second column.	05	L3	CO4
		OR			
Q.8		Calculate the Eigen values of a matrix. A = [5 –3 2 ; –3 8 4 ; 4 2 –9]	10	L3	CO4

Module – 5					
Q.9		Write a script file to solve linear equation. $5x_1 + 2x_2 + x_3 = 2$ $3x_1 + 6x_2 + x_3 = 3$ $2x_1 + 3x_3 = 5$	**10**	**L2**	**CO4**
OR					
Q.10	**a.**	Discuss Script Files Involved in MATLAB programming.	**05**	**L3**	**CO4**
	b.	Explain Langrage – Specific features	**05**	**L2**	**CO4**

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