

**JNTUA UNIVERSITY  
PREVIOUS QUESTION PAPERS**

B.Tech III Year II Semester (R15) Regular Examinations May/June 2018

**MATLAB PROGRAMMING**  
(Electronics and Communication Engineering)

Time: 3 hours

Max. Marks: 70

**PART – A**  
(Compulsory Question)

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1 Answer the following: (10 X 02 = 20 Marks)

- (a) Define logic expression.
- (b) What is meant by debugging?
- (c) Distinguish between array multiplication and matrix multiplication.
- (d) Find the element by element multiplication operation between two vectors x and y.  
 $x = [1 \ 2 \ 3]$  and  $y = [3 \ 1 \ 2]$
- (e) List any two elementary mathematical functions.
- (f) What is user defined functions?
- (g) Mention any two differences between relational and logical operators.
- (h) What are the basic conditional statements available in matlab?
- (i) Solve the given equation using matrix method of linear equation:  

$$\begin{aligned} 2x_1 + 9x_2 &= 5 \\ 3x_1 - 4x_2 &= 7 \end{aligned}$$
- (j) Find the determinant of  $A = \begin{pmatrix} 2 & 3 \\ 3 & 2 \end{pmatrix}$  and write the matlab command for determinant.

**PART – B**

(Answer all five units, 5 X 10 = 50 Marks)

**UNIT – I**

2 Explain the significance of script files and editor debuggers in matlab program.

OR

3 Describe various options available in the menus and toolbars in matlab software.

**UNIT – II**

4 Explain about the functions to sort, rotate, permute, reshape, shift array contents and circshift array contents.

OR

5 Construct multidimensional arrays with the help of concatenation function.

**UNIT – III**

6 Mention the syntax of function statement and create a user defined function to return the maximum number when three numbers are given as arguments.

OR

7 Describe briefly about the advanced functions available in matlab programming.

**UNIT – IV**

8 Mention different types of conditional statements and loop control statements.

OR

9 Describe commonly used commands for plotting graphs in results analysis.

**UNIT – V**

10 Write a matlab program to solve the linear system using the Cramer's method.

$$\begin{aligned} 2x_1 + 3x_2 - x_3 &= 1 \\ x_1 + 2x_2 - x_3 &= 4 \\ -2x_1 - x_2 + x_3 &= -3 \end{aligned}$$

OR

11 Write a matlab program to solve the set of linear system equations using elementary solution method.

$$\begin{aligned} x + 2y + 3z &= 0 \\ 3x + 4y + 4z &= 0 \\ 7x + 10y + 12z &= 0 \end{aligned}$$

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B.Tech III Year II Semester (R15) Supplementary Examinations December/January 2018/2019

**MATLAB PROGRAMMING**

(Electronics &amp; Communication Engineering)

Time: 3 hours

Max. Marks: 70

**PART – A**  
(Compulsory Question)

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- 1 Answer the following: (10 X 02 = 20 Marks)
- What is a command window?
  - How to create M-file?
  - Implement element by element multiplication operation of two matrices A and B.  
 $A = \begin{pmatrix} 4 & 1 \\ 2 & 3 \end{pmatrix}; B = \begin{pmatrix} 2 & 1 \\ 1 & 2 \end{pmatrix}.$
  - Give any two advantages of cell array in matlab programming.
  - Write any two advantages of advanced function programming.
  - What is the purpose of data files?
  - Distinguish between plot and stem in plotting results.
  - How does the subplot function will work in plotting graphs?
  - Find the determinant of  $A = \begin{pmatrix} 3 & 4 \\ 2 & 3 \end{pmatrix}$  and write the matlab command for determinant.
  - Write a matlab program to solve linear equations using inverse method given below.

**PART – B**

(Answer all five units, 5 X 10 = 50 Marks)

**UNIT – I**

- 2 Discuss about script file and function file in writing matlab program with examples.

**OR**

- 3 Explain about MATLAB basic syntax and matlab help system.

**UNIT – II**

- 4 Describe about MATLAB array and discuss about the following functions with examples used in MATLAB program: (i) Zeros ( ). (ii) Ones ( ). (iii) Eye ( ).

**OR**

- 5 Explain cell array and its syntax in writing a matlab program with an example.

**UNIT – III**

- 6 What are the user defined functions? Write matlab program to sort vector  $v = [23 \ 45 \ 12 \ 9 \ 5 \ 0 \ 19 \ 17]$  using matlab commands.

**OR**

- 7 Discuss about elementary mathematical function with proper commands.

**UNIT – IV**

- 8 List various relational operators available in matlab with detailed description.

**OR**

- 9 Describe about control-flow structures frequently used in matlab programming with examples.

**UNIT – V**

- 10 Write a matlab program to solve the set of linear system equations using the matrix method:

$$x + 2y + 3z = 9$$

$$2x - y + 3z = 8$$

$$3x + 0y - z = 3$$

**OR**

- 11 Write a matlab program to solve the set of linear system equations using the Cramer's method:

$$x + y + z = 11$$

$$2x - 6y - z = 0$$

$$3x + 4y + 2z = 0$$

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B.Tech III Year II Semester (R15) Regular &amp; Supplementary Examinations May/June 2019

**MATLAB PROGRAMMING**

(Electronics and Communication Engineering)

Time: 3 hours

Max. Marks: 70

**PART – A**  
(Compulsory Question)

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1 Answer the following: (10 X 02 = 20 Marks)

- (a) Define logic expression.
- (b) What is a command window?
- (c) Distinguish between array multiplication and matrix multiplication.
- (d) Find the element by element multiplication operation of two matrices A and B.

$$A = \begin{pmatrix} 4 & 1 \\ 2 & 3 \end{pmatrix}; B = \begin{pmatrix} 2 & 1 \\ 1 & 2 \end{pmatrix}.$$

- (e) List any two elementary mathematical functions.
- (f) Write any two advantages of advanced function programming.
- (g) Distinguish between plot and stem.
- (h) What are basic conditional statements available in matlab?
- (i) Write matlab program to solve linear equations using inverse method given below:

$$A = \begin{pmatrix} 3 & 5 \\ 5 & 8 \end{pmatrix}.$$

- (j) Find the determinant of  $A = \begin{pmatrix} 3 & 4 \\ 2 & 3 \end{pmatrix}$  and write the matlab command for determinant.

**PART – B**

(Answer all five units, 5 X 10 = 50 Marks)

**UNIT – I**

2 Describe various items in the menus and toolbar available in matlab software.

**OR**

3 Discuss about script file and function file in writing matlab program.

**UNIT – II**

4 Explain about the functions to sort, rotate, permute, reshape, and shift array contents and circshift array contents.

**OR**

5 Describe about MATLAB array and discuss about functions zeros ( ), ones ( ) and eye ( ) used in MATLAB program.

**UNIT – III**6 Explain about user defined functions and write matlab program to sort vector  $v = [23 \ 45 \ 12 \ 9 \ 5 \ 0 \ 19 \ 17]$  using matlab commands.**OR**

7 Describe about control-flow structures frequently used in matlab programming.

**UNIT – IV**

8 Describe commonly used commands for plotting graphs in result analysis.

**OR**

9 Discuss in detail about the various relational operators available in matlab.

**UNIT – V**

10 Solve the linear system by without using the Cramer's method:

$$2x_1 + 3x_2 - x_3 = 1$$

$$x_1 + 2x_2 - x_3 = 4$$

$$-2x_1 - x_2 + x_3 = -3$$

**OR**

11 Write a matlab program to solve the set of linear system equations using the matrix method:

$$x + 2y + 3z = 9$$

$$2x - y + 3z = 8$$

$$3x + 0y - z = 3$$

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