

2024

COMPUTER SCIENCE

B.Sc. Third Semester End Examination - 2024

PAPER - SEC03T (MATLAB)

Full Marks : 20

Time : 1 hour

The figures in the right-hand margin indicate marks.

Candidates are required to give their answers in their own words as far as practicable.

Illustrate the answers wherever necessary.

Group - A

1. **Answer any five questions :** **5×2=10**
- (i) What is MATLAB API? Explain how polynomials can be represented in MALLAB?
 - (ii) What is Get and Set in MATLAB? Are Multi-dimensional arrays supported in MATLAB?
 - (iii) What do you mean by M-file in MATLAB? How do we define label of X-axis and Y-axis during a graph plot?
 - (iv) What are memory management functions in MATLAB?

(Turn Over)

(2)

- (v) Explain about the mentioned tools in MATLAB : who, whos, pi, eps, type.
- (vi) How you convert Decimal number to Binary and vice-versa in MATLAB?
- (vii) Suppose we want to create a vector V1 with elements 1,3, 9, 20, 25, 30 and then extract its 1st, 3rd and 5th elements and store it into another vector V2. Write Matlab commands for this.
- (viii) Suppose, we run the following Matlab commands.
What will be the output?

```
A=[11 3125 6 19 515 21 15 9 1];
```

```
B=[22 39 10 17 25 26 38 13 1];
```

```
V1=setxor(A,B)
```

```
V2=setdiff(A,B)
```

Group - B

Answer any two questions.

2×5=10

2. (a) Explain handle graphics in MATLAB?
(b) What is 3D-Visualization elements in MATLAB?5+5
3. (a) Write a user-defined function to compute nC_r .

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(Continued)

(3)

- (b) Write a Matlab program to transpose a square matrix and then to find determinant of this resultant matrix.
5+5
4. (a) What are the basic Plots and Graphs of MATLAB?
(b) Write a MATLAB program for reading a vector from keyboard and then find the standard deviation of vector elements.
5+5

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