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B.Sc. (Hons. Math) (Semester – 5th)

MATLAB

Subject Code: BMATS1-505

Paper ID: [19131224]

Time: 03 Hours

Maximum Marks: 60

Instruction for candidates:

1. Section A is compulsory. It consists of 10 parts of two marks each.
2. Section B consist of 5 questions of 5 marks each. The student has to attempt any 4 questions out of it.
3. Section C consist of 3 questions of 10 marks each. The student has to attempt any 2 questions.

Section – A

(2 marks each)

Q1. Attempt the following:

- a. What is MATLAB?
- b. What is The MATLAB working environment?
- c. Define MATLAB operations.
- d. What is Return value?
- e. How to write functions in MATLAB?
- f. What are the types of Loops does MATLAB provides?
- g. Define logic in MATLAB.
- h. What are the basic Plots and Graphs of MATLAB?
- i. Define algebraic equations?
- j. What is a symbolic function in MATLAB?

Section – B

(5 marks each)

Q2. Explain some arithmetic operations in MATLAB?

Q3. What do you mean by M-file in MATLAB?

Q4. Write any MATLAB programme using if-else statement to determine the larger of two numbers.

Q5. Find the integral of $y = x^3 + 2x^2 - x + 3$ with respect to x, evaluated from -1 to 1 and write the MATLAB commands for this.

Q6. Explain some matrix operations in MATLAB with example.

Section – C

(10 marks each)

Q7. (a) Define Matlab window, command window, workspace, command history and basic commands in MATLAB.

(b) Explain the basic operations to solve arithmetic equations in MATLAB with example.

Q8. What is Loop and Conditional statement? Write a programme of MATLAB including Loops and Conditional statement.

Q9. Write a MATLAB programme for:

(a) Finding roots of a polynomials with example.

(b) Solving a differential equation with example.