DF-1490

M. Sc. (Sem. III) (Mathematics) Examination
March/April – 2016
6002 : Mathematical Software

Time : Hours] [Total Marks :

Instructions :

(1) Fill up strictly the details of ☐ signs on your answer book.

Name of the Examination:
M. SC. (SEM. III) (MATHEMATICS)

Name of the Subject:
PAPER-6002 : MATHEMATICAL SOFTWARE

Subject Code No.: 1 4 9 0 ☐ Section No. (1, 2,......): Nil

Seat No.:

Student's Signature

(2) Attempt all questions.

(3) Figures to the right side indicate full marks.

(4) Follow usual notations and conventions.

1. Attempt any two
   A. Discuss the major tools within or accessible form the Matlab desktop
   B. How to use Matlab as a calculator also discuss basic arithmetic operators using examples
   C. Discuss the hierarchy of arithmetic operator in Matlab

2. Attempt any two
   A. Discuss the logical operators in Matlab
   B. Discuss the Arithmetic in Matlab
   C. Explain the relational operator in MATLAB give appropriate example.

3. Attempt any two
   A. Discuss colon operator and Linear spacing function. Also define the relation between the same
   B. Discuss the following functions with example
      1. eye  2. zeros  3. ones  4. diag  5. rand
   C. Discuss the scalar and matrix operation in Matlab with example

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[Contd...
Attempt any two

A State the output of the following program
   number = 38; remainder2 = rem(number,2); remainder3 = rem(number,3);
   if remainder2==0 && remainder3==0
       result = 'Your number is divisible by both 2 and 3';
   elseif remainder2==0
       result = 'Your number is divisible by 2 but not by 3';
   elseif remainder3==0
       result = 'Your number is divisible by 3 but not by 2';
   else
       result = 'Your number is not divisible by 2 or 3';
   end
   disp(result)

B State the output of the following program
   n = 20; x = zeros(n,1); x(1) = 0; x(2) = 1;
   for i=3:n
      x(i) = x(i-1) + x(i-2);
   end
   x;

C Write a program that approximates \( \sin(x) \) by computing the sum of series.

Attempt any two

A Discuss the nested if in Matlab.
B Discuss the while loop in Matlab.
C Discuss the nesting loops in Matlab.