UNDERTAKING

The Computer Programming MATLAB Sessional Examination Jan. 2021 has been conducted as per prescribed syllabus by the University. I am giving this MATLAB Sessional Exam on Dated 19 Jan. 2021 as per University Date Sheet online without using any unfair means. If at any stage, it is found that I use any unfair means, I shall be responsible for the consequences without raising any objections or correspondence in the future.

Name_____

Class_____

Roll No._____

Signature_____

UIET, PANJAB UNIVERSITY, CHANDIGARH

Department of Mechanical Engineering

Sessional Examination, Jan. 2021

B.E. (Mechanical) 1st Semester (Section – I and II)

Computer Programming (MATLAB)

Time: 90 minutes **Max. Marks:** 30

Instructions:

1. Attempt all questions.
2. Section – A consists of one question carrying 10 marks (10 questions carrying 1 mark each).
3. Section – B consists of 4 questions carrying 5 marks each.

Section – A

1. Answer all questions as follows:
   i) Define logic expression.
   ii) What is meant by debugging?
   iii) What is user defined function? Give example.
   iv) Mention any two differences between relational and arithmetical operators.
   v) What are the basic conditional statements available in MATLAB?
   vi) Solve the given equation using matrix method of linear equations:

   $2x_1 + 9x_2 = 5$

   $3x_1 - 4x_2 = 7$

   vii) Find the determinant of A = $\begin{bmatrix} 5 & 3 \\ 3 & 2 \end{bmatrix}$ and write the MATLAB command for the determinant.
   viii) List any two elementary mathematical functions.
   ix) Differentiate between array multiplication and matrix multiplication.
   x) Write any two advantages of MATLAB programming.

Section – B

1. Discuss about script file and function file in writing MATLAB program with examples.

   OR

   List various relational operators available in MATLAB with detailed description.

2. Write a MATLAB program to solve the set of linear system of equations using the Cramer's method:

   $x + y + z = 11$

   $2x - 6y - z = 0$

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

3. Describe about MATLAB arrays and control flow structures and discuss about functions zeros ( ), ones ( ) and eye ( ) used in MATLAB program.

   OR

   Explain the logical operators used in MATLAB using neat and labeled diagrams. Also, discuss the MATLAB commands used for these logical operators.

4. Discuss in detail the 2D and 3D surfaces used in MATLAB using neat and labeled graphs. Also, write the MATLAB commands in plotting these graphs.

   OR

   Write some applications of MATLAB. Explain File/Directory Management and Data analysis using flow chart and MATLAB commands.

******