Exam.Code:0905
Sub. Code: 33256

2125

B.E.(MEC), First Semester

ESC-X02: Computer Programming (MATLAB)

Time allowed: 3 Hours **Max. Marks: 50**

NOTE: Attempt five questions in all, including Question No. I which is compulsory and selecting two questions from each Section.

x-x-x

Q1. (a) What is command window? 2*5=10

(b) Distinguish between plot and stem in plotting results.

(c) List any two elementary mathematical functions.

(d) What are the basic conditional statements available in Matlab?

(e) What is polyfit function in MATLAB?

Section A

Q2. (a) Describe in brief about multidimensional array with some examples. 5

(b) What statements are used to control the operation of while loops and for loops? 5

Q3. (a) Differentiate between script file and function file. 5

(b) Write MATLAB function to compute function circle which computes the area A and circumference C of a circle, given its radius as an input argument. 5

Q4. (a) Explain relational operators in MATLAB with suitable examples. 5

(b) Discuss the functions of Menus and Tool bars available in MATLAB. 5

Section B

Q5. (a) Describe commonly used commands for plotting graphs in results analysis. 5

(b) How would you create multiple plots within a single figure window? Specify the command used and its primary arguments. 5

Q6. (a) How do you make a movie from an image in MATLAB? 5

(b) How to create a GUI in MATLAB image processing? 5

Q7. Use MATLAB to solve the following differential equation: 10

$$\frac{dy}{dt} + 4y(t) = e^{-t}$$

with initial condition as $y(0) = 1$. Also write code to display the variation of y with t. Make use of labels along x and y axis and also show grid lines on the plot.

x-x-x