2023
B.A./B.Sc.
Fourth Semester
SKILL ENHANCEMENT COURSE – 2
COMPUTER SCIENCE
Course Code: CSS 4.11
(Programming in MATLAB)

Total Mark: 35   *Pass Mark: 14*
Time: 2 hours

Answer <u>five</u> *questions, taking* <u>one</u> *from each unit.*

UNIT–I

1. (a) Explain different input and output components of a computer.   3
    (b) Explain four different types of number systems?   4

2. (a) Convert the following: 2+1=3

    (i) $(10110.001)_2 = (?)_{10}$ (ii) $(152)_{10} = (?)_8$
    (b) What is a software? What is the difference between machine
    language and assembly language?   1+3=4

UNIT–II

3. (a) Explain different components of MATLAB work environment.   5
    (b) How do you create M-file?   2

4. (a) What is an array? How is an array declared in MATLAB program?
    1+3=4
    (b) Mention any two differences between relational and logical
    operators.   3

UNIT–III

5. (a) Describe commonly used commands for plotting graphs in
    MATLAB.   4
    (b) Write a MATLAB program to calculate the grade of a student.   3

6. (a) Explain two built-in functions in MATLAB. 4
   (b) Write a MATLAB program to solve the set of linear system
   equations using the matrix method: 3

   $$X + Y + Z = 11$$
   $$2X - 6Y - Z = 0$$
   $$3X + 4Y + 2Z = 0$$

UNIT–IV

7. (a) Explain for loop in MATLAB. 4
   (b) Write a program which will find the sum of n numbers in MATLAB.
   3

8. (a) Explain 'Nested-If-Else' statement in MATLAB. 4

   (b) Find the determinant of $\begin{vmatrix} 1 & 3 & -2 \\ 0 & 5 & 1 \\ 4 & -1 & 2 \end{vmatrix}$ using normal mathematical

   calculation and also write MATLAB command for finding the
   determinant of the above matrix. 2+1=3

UNIT–V

9. (a) How do you write to a text file and read from a text file in MATLAB.
   4
   (b) Write a short note on sort function of MATLAB. 3

10. (a) Why do we need random number? 2
    (b) Differentiate between Rand(2,1), Randi(6) and Randi(10,5,2). 3
    (c) Write the syntax for creating a button. 2

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