

**April 2025**  
**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 five questions, taking one from each unit.*

**UNIT-I**

1. (a) Explain various number systems. 4  
(b) Do the following conversions. 3  
(i)  $(101111)_2 = (?)_{10}$  (ii)  $(252)_{10} = (?)_8$
2. (a) Explain three main components of a computer system. 3  
(b) What is software hierarchy? What is the difference between machine language and assembly language? 2+2=4

**UNIT-II**

3. (a) Write short notes on workspace in MATLAB environment. 5  
(b) Explain different relational operators available in MATLAB. 2
4. (a) Explain advantages of MATLAB. 3  
(b) What is user defined function? How to declare array in MATLAB program? 1+3=4

**UNIT-III**

5. (a) Explain line specifiers in the plot command in MATLAB. Draw the plot of the polynomial expression  
 $f(x) = 3x^4 + 2x^3 + 7x^2 + 2x + 9$  3+2=5  
(b) Write a MATLAB program to calculate the grade of a student. 2
6. (a) Explain four built-in functions in MATLAB. 4

- (b) Write a MATLAB program to solve the set of linear system equations using the matrix method:

$$X - Y + 2Z = 1$$

$$2Y - 3Z = 1$$

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

3

#### UNIT-IV

7. (a) Explain basic conditional statements available in MATLAB. 4

- (b) Write a program which will find the sum of  $n$  numbers in MATLAB. 3

8. (a) Explain for loop and switch statement in MATLAB. 4

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

calculation. Write the MATLAB command for finding determinant and inverse of above matrix.

2+1=3

#### UNIT-V

9. (a) Why is find function used in MATLAB? How is text file written and read in MATLAB. 2+3=5

- (b) Write a short note on sort function of MATLAB. 2

10. (a) What is random number? Explain the following functions:

(i) Rand() (ii) Randi() 1+2=3

- (b) How are GUI created in MATLAB? Perform the steps for addition of two numbers. 4