



C16-EC-402

**6436**

**BOARD DIPLOMA EXAMINATION, (C-16)**

**JANUARY/FEBRUARY—2022**

**DECE - FOURTH SEMESTER EXAMINATION**

**PROGRAMMING IN C AND MATLAB**

*Time : 3 hours ]*

*[ Total Marks : 80*

**PART—A**

3×10=30

- Instructions :**
- (1) Answer **all** questions.
  - (2) Each question carries **three** marks.
  - (3) Answers should be brief and straight to the point and shall not exceed five simple sentences.

1. List the character set of C language.
2. Write the syntax for printf ().
3. List the three types of iterative statements supported by C.
4. Give the syntax for if-else in C.
5. List the three functions used for reading strings.
6. Differentiate address and dereferencing operators.
7. Define union.
- \* 8. What is the use of the union?
9. List the relational operators in MATLAB.
10. Write the syntax of while loop in MATLAB.

\*

## PART—B

- Instructions :** (1) Answer *any five* questions.  
(2) Each question carries **ten** marks.  
(3) Answers should be comprehensive and criterion for valuation is the content but not the length of the answer.

- 11.** Explain increment and decrement operators with examples. 10
- 12.** (a) Explain switch-case statement. 5  
(b) Write a program for the addition of  $n$  natural numbers using 'for' loop in C. 5
- 13.** (a) Define one dimensional array. 2  
(b) Write a program in C for the addition of two  $2 \times 2$  matrices  $A$  and  $B$  and to keep the result in matrix  $C$ . 8
- 14.** Write the operation of `getchar()`, `getch()`, `getche()` and `putchar()` functions. 10
- 15.** Write a program to find the factorial of a number ( $n!$ ) using function call technique in C. 10
- 16.** (a) Create a structure student to store student data consisting of details name, rollno, marks1, marks2, marks3, total, avg. 6  
(b) Create two structure variables  $s_1$  and  $s_2$  for the above structure. 4
- 17.** (a) Explain how to find the size of a structure. 4  
(b) State the use of any three preprocessor directives. 6
- 18.** (a) Write the syntax with an example for creating a row vector, column vector, 2D array ( $2 \times 2$  matrix) in MATLAB. 6  
(b) Write the purpose of the commands `xlabel()` and `ylabel()` in MATLAB. 4

★ ★ ★

\*