C20-EC–405

7443

BOARD DIPLOMA EXAMINATION, (C-20)

NOVEMBER/DECEMBER—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 any three logical operators supported by C.

2. Write about the operator precedence.

3. Describe the syntax of If...Else conditional statement.

4. Give the syntax of do while statement.

5. List any three String manipulation functions.

6. Write the syntax of assignment of a pointer.

7. Differentiate structure and union in any three aspects.

8. Describe the method declaring a Union variable.

9. List any three common input/output functions in MATLAB.

10. List any three major differences between C and MATLAB.

PART—B

8×5=40

Instructions : (1) Answer either *(a)* **or** *(b)* from each question.

(2) Each question carries **eight** marks.

(3) Answers should be comprehensive and criterion for valuation is the content but not the length of the answer.

11. *(a)* Explain nested If...Else statement with a simple example.

(OR)

(b) Explain declaration and initialization of One Dimensional Array with a simple example.

12. *(a)* Write a program to print even and odd numbers.

(OR)

(b) Write a C program to perform matrix addition.

13. *(a)* Explain function call technique with a simple program.

(OR)

(b) Explain call by reference in function with a simple program.

14. *(a)* Explain how to find size of a structure with a simple program.

(OR)

(b) Explain the conditional pre-processor directives with examples.

15. *(a)* Explain decision making statements *(i)* if...end statement and *(ii)* if...else...end statement used in MATLAB with a simple example.

(OR)

(b) Illustrate plot commands : bar( ), pie ( ) in MATLAB.

PART—C

10×1=10

Instructions : (1) Answer the following question.

(2) The question carries **ten** marks.

(3) Answer should be comprehensive and criterion for valuation is the content but not the length of the answer.

16. Analyze the program if a = 5, b = 10 and write the output.

```
#include<stdio.h>
int main()
{
    int x, y, *a, *b, temp;

    printf("Enter the value of x and y\n");
    scanf("%d%d", &x, &y);

    printf("Before Swapping\nx=%d\ny=%d\n", x, y);

    a = &x;
    b = &y;

    temp = *b;
    *b = *a;
    *a = temp;

    printf("After Swapping\nx=%d\ny=%d\n", x, y);

    return 0;
}
```

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