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MCS-011

MASTER OF COMPUTER APPLICATIONS (REVISED)/ BACHELOR OF COMPUTER APPLICATIONS (REVISED) (MCA/BCA)

Term-End Examination

December, 2022

MCS-011 : PROBLEM SOLVING AND PROGRAMMING

Time : 3 Hours *Maximum Marks : 100*

Weightage : 75%

Note : *Question No.* ***1*** *is compulsory. Answer any* ***three*** *questions from the rest.*

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1. (a) Write an algorithm to find highest and lowest marks obtained by students of batch size 10. Also draw a flowchart for this algorithm. 10

(b) Write a recursive program/function in C to find factorial of a given number between 1 to 10. 10

(c) Write a program in 'C' to sort an array of 10 elements in ascending order. 10

(d) Explain difference between 'call by value' and 'call by reference' with the help of examples. 10

2. (a) What is Union ? How is it different from structure ? Explain declaration and use of union in C with the help of an example and program. 10

(b) Write a C program to find the average of diagonal elements of a matrix of 6×6. 10

3. (a) Write the syntax and explain the use of the following functions in C : 10

(i) malloc

(ii) fputc

(iii) strcat

(iv) fclose

(b) Write a C program using pointers to find whether a given string is palidrome or not. 10

4. (a) Write a 'C' program to copy a given string into another string without using inbuilt function. Also display the length of the resultant string. 14

(b) Explain the use of the following statements with the help of an example : 3×2=6

(i) Switch statement

(ii) Else-if statement

(c) Write a macro to evaluate : 4

$$f(x) = 5x^3 + 2x + 3$$

5. (a) Write a program to display the following pattern : 6

1 2 3 4

5 6 7

8 9

(b) Write C program to swap two given values. 4

(c) Write C program to open an existing file "My.TXT" and read its content and display it. 10