C (Printed Pages 3)

Roll No.

22/2095

B.C.A. Examination, 2022

First Semester

Second Paper

(Programming Principles & Algorithm)

Time : 1:30 Hours] *[Maximum Marks : 75*

Note : Attempt any **five** questions. **All** questions carry equal marks. The answer to given questions should not exceed 250 words each.

1. Write down the structure of a C program. How can we use functions as the building blocks of the program? Illustrate with an example. 15

2. Explain with examples, the following in a C program : 2+3+5+5

   (a) Variables

P.T.O.

   (b) Data types

   (c) Operator Precedence

   (d) Break and Continue

3. Differentiate between the following with the help of examples : 5+5+5

   (a) 'While' and 'Do-while'

   (b) Algorithm and Flowchart

   (c) 'If-else' and 'Switch' statements

4. (a) What is pseudocode? Where is it used? is it used?

   (b) Write the flowchart and the algorithm for finding the sum to N terms of the Fibonacci series of numbers.

5. Write a program in C for reversing the digits of a number. 15

6. Write a program in C for the computation of the Factorial value of a number by using the method of Recursion. 15

7. (a) What is meant by Function prototype? What information does it convey to a C compiler? 7½.

   (b) Distinguish between Function Call and Function body with an example function defined by you. 7½

8. Define 'Recursion'. Illustrate it by calling a recursive function that computes the GCD of two integers M, N. 15

9. Differentiate between : 15

   (i) Call by Reference and Call by value

   (ii) Perfect Number and prime number

   (iii) Getchar ( ) and putchar ( )