C

(Printed Pages 4)

Roll No. _____

23/3096

B.C.A. (First Semester) Examination, 2023

Second Paper

(Programming Principles & Algorithm)

Time : 3:00 Hours] *[Maximum Marks : 75*

Note : Attempt **all** sections as per instructions.

Section-A

(Very Short Answer Questions)

Note : Attempt all **five (05)** questions. Each question carries **two** marks and answer of each question should not exceed **50** words. 2×5=10

1. (a) Write the structure of a C program and give an example. 2

   (b) Name the different data types in C language. 2

   (c) What is the purpose of getchar () and putchar ()? 2

P.T.O.

(d) Differentiate between Flowchart and Algorithm. 2

(e) What do you understand by Function in C language? 2

Section-B

(Short Answer Type Questions)

Note : Attempt any **five (5)** out of **eight (08)** questions. Each question carries **(05)** marks and answer of each question should not exceed **100** words. 5×5=25

2. (a) Write a program in C language to calculate print the factorial of a number using recursion. 5

   (b) What do you understand by preprocessor directives in C? Explain with examples. 5

   (c) Write a note on bitwise operators in C language. Give examples. 5

   (d) What are the essential characteristics of an algorithm? Enumerate. 5

   (e) Write a C program to print out the sum of the first N natural numbers. 5

(f) What are the steps involved in problem solving? Name the different problem solving techniques. 5

(g) Write a program in C for reveasing the digits of a number (integer) 5

(h) Differetitate between local and global variable with example. 5

Section-C

(Long Answer Type Questions)

Note : Attempt any **04 (four)** out of **(eight) 08** questions. Each question carries **10 (ten)** marks and the answer of each question should not exceed 400 words.

10×4=40

3. (a) Write an account of the following with examples: 2½×4=10

(i) Ternary operator

(ii) Increment and Decrement operators

(iii) Assignment operator

(iv) Relational operators

(b) Explain the different decision making structures in C language. Give examples of each. 10

(c) Draw a flow chart for computing the GCD of two integers. Write the algorithm for this also. 10

(d) How is parameter passing carried out in C language? Discuss the different methods involved. 10

(e) Write a program in C to generate all Prime numbers between 1 to 100. 10

(f) Differentiate between the following with examples. 2½×4=10

(i) Print f() and Scan f()

(ii) Break and continue

(iii) Space complexity and time complexity of a program

(iv) Unary operator and binary operator

(g) What are the differences between 'If' statement and 'Switch' statement? Explain with an example. 10

(h) (i) What is meant by user defined function and built in function? Give examples of both. 5+5

(ii) Write the working of the shift operator and give examples.