Exam. Code : 103202
Subject Code : 1029

B.A./B.Sc. 2nd Semester

COMPUTER APPLICATION

(Programming Using C)

Time Allowed—Three Hours] [Maximum Marks—75

Note :—Attempt any **FIVE** questions. All questions carry equal marks.

1. Explain the use of flow-charts in problem solving. How is it different from a pseudo code ? Draw a flow-chart to print the sum of digits of a three digit number.
2. Name and explain various arithmetical, relational and logical operators in 'C' and their order of execution, with examples.
3. (a) Explain the syntax of switch-case statement in 'C' language. Also compare the performance of switch-case with if-else statement.

   (b) State one similarity and one difference between while and do while loop in 'C'. Explain the utility of break and continue statements in these two loops.

4. (a) In what way does an array differ from an ordinary variable in C ? What is the significance of the name of the array ? How are arrays represented in memory ?

   (b) Write a C program that declares an array of 100 integers and finds the largest elements in this array.

5. (a) What is pointer ? Discuss its various advantages and disadvantages. What are the various arithmetic operations that can be performed on pointer variables ?

   (b) Explain with example, the concept of parameter passing by reference and by value in C. Your example should emphasize on the advantages and disadvantages of both the concepts.

6. (a) The C language handles strings differently than many other languages. Explain how C looks at strings differently than other programming languages and outline the pros and cons of how strings are accessed and treated in C. What is the strchr() function used for ?

   (b) Write a C-function to calculate the length of a string [do not use strlen()].

7. (a) Define Structure in C and write the general format for declaring and accessing structure members with an example. What are the limitations of structure compared to union ?

   (b) What is a function in C ? What is a function prototype in C ? Write a function in C to find the GCD of two positive integers.

8. (a) Explain the various input/output statements/ functions in C-language with the help of examples.

   (b) What is recursion ? Write a recursive C-function to compute the factorial of a given positive integer.