Roll No. □□□□□□□□□□□□ **Total No. of Pages : 2**

Total No. of Questions : 09

MCA (Sem.–1st)
PROGRAMMING IN C
Subject Code : MCA-102
Paper ID : [B0102]

Time : 3 Hrs.   **Max. Marks : 60**

INSTRUCTION TO CANDIDATES :

1. **SECTIONS-A, B, C & D contains TWO questions each carrying TEN marks each and students has to attempt any ONE question from each SECTION.**
2. **SECTION-E is COMPULSORY carrying TWENTY marks in all.**
3. Use of non-programmable **scientific calculator** is allowed.

SECTION-A

l. a) What is a Flowchart? What are its applications? Make a flow chart of 'nested if' statement.

   b) What is a Variable? Give naming rules of a variable. Use some assignment statements.

2. What are the various data types available in C language? Discuss conditional statements with suitable example program of each. Make their flowchart as well.

SECTION-B

3. a) What is an Array? What are various types of array? Explain with the

   b) What is a Function? Give its types and write as program to show the use of recursion.

4. Write short note on :

   a) Storage class

   b) Pre-processors

   c) Header files. Give example programs as well.

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SECTION-C

5. What is a Pointer? What are various types of a pointer? Implement a linked list with the help of pointers.

6. Differentiate Structure and Union. Also write a program to show the difference between them.

SECTION-D

7. How file handling is done in C? Explain various functions used for opening, closing and processing a file in 'C' language.

8. Discuss various searching and sorting techniques available in C. Give example of each one.

SECTION-E

9. Answer briefly :

   a) What is the difference between an algorithm and a flowchart?

   b) What is the use of command line arguments?

   c) What is difference between assignment operator and equality operator?

   d) What is the difference between a static and auto variable?

   e) Differentiate between user defined functions and library defined functions.

   f) Explain strcmp function. What is type casting?

   g) What is pointer to pointer? Explain with example.

   h) Explain malloc() function using an example?

h.

   j) What is Sorting? What is the time complexity of bubble sort?