62451

Reg. No.

I Semester M.C.A. Degree Examination, June/July - 2023

COMPUTER SCIENCE

The Art of Computer Programming

(CBCS Scheme (Y2K20))

Paper : IMCA1

Time : 3 Hours **Maximum Marks : 70**

Instructions to Candidates:

Answer any Five questions from Part - A

Answer any Four questions from Part - B.

PART - A

Answer any Five questions. Each question carries 6 marks. (5×6=30)

1. Explain Asymtotic notations.
2. Write an algorithm to reverse the digits of an integer, check your algorithm for the input 4356.
3. Explain with example the formatted I/O functions in C.
4. Explain with examples the different forms of if statements.
5. Write a C program to remove duplicate elements from an unordered array.
6. Write a C Program for multiplying two matrices.
7. Explain two-way merge with an example.
8. Write the string matching algorithm and state its complexity.

PART - B

Answer any Four questions. Each question carries 10 marks.

9. a) Write an algorithm for coverting a decimal number to binary. (5+5)

   b) State with example any five string functions in C.

10. a) Write a recursive algorithm for generating n^{th} fibonacci number. (5+5)

    b) Explain the different looping constructs in C.

P.T.O.

11. a) Differentiate with example-call by reference and call by value. (6)

b) Discuss with example command line arguments. (4)

12. a) Explain different types of arrays with examples. (5+5)

b) What are pointers? Explain with example how pointer is used to reference array elements.

13. Write a C program for binary search and trace it for the following array. Take search value as 15. (10)

2, 5, 6, 9, 11, 15, 18, 21.

14. Write Insertion sort algorithm. Trace the algorithm for the following array. (10)

5, 2, 4, 6, 1, 3.