COMPSEM–125

M.Sc. (Ist Semester) Examination, Dec., 2022

COMPUTER SCIENCE

Paper – MSC–CS–CC–104

(C++ Programming)

Time : 3 Hours] [*Maximum Marks : 40*

The question paper contains three Sections.

Section–A **(Marks : 1 × 10 = 10)**

Note :– Answer all *ten* questions (Answer limit **50** words). Each question carries **1** mark.

Section–B **(Marks : 3 × 5 = 15)**

Note :– Answer any *five* questions by selecting at least *one* question from each Unit (Answer limit **200** words). Each question carries **3** marks.

Section–C **(Marks : 5 × 3 = 15)**

Note :– Answer any *three* questions by selecting *one* question from each Unit (Answer limit **500** words). Each question carries **5** marks.

Section–A

1. (i) Define OOPs.

    (ii) List out the various data types in C++.

(iii) Define Recursion.

(iv) Explain type casting in C++.

(v) What is Polymorphism ?

(vi) How can we declare static members in C++ ?

(vii) Define Abstract Class.

(viii) List any *four* string functions.

(ix) Define Template.

(x) What are additional features incorporated in C++ ?

Section–B

Unit–I

2. Differentiate while and for loops in C++ using suitable examples.

3. What is Pointer ? How pointers can be passed to and return from a function ? Explain with suitable examples.

4. Explain matrix multiplication using suitable example.

Unit–II

5. Differentiate between multiple and multilevels inheritance.

6. Explain, why inline function are used ? Also give a code snippt to explain how we can declare inline functions in C++.

7. What is Overriding ? How is it different from overloading ?

Unit–III

8. What is Standard Template Library (STL) in C++ ? Explain with an example that it is useful.

9. Write a program in C++ for Linear searching.

10. Explain insertion sort with example.

Section–C

Unit–I

11. Explain the various characteristics and applications of OOPs programming.

12. What is Function ? Explain the difference between pass by values and pass by reference in C++ functions. Give examples.

Unit–II

13. Why constructors and destructors are important ? Explain how we can declare and define constructors and destructors in C++.

14. What is Friend function ? Explain how friend function helps in operator overloading.

Unit–III

15. Explain Binary Search in detail with suitable example.

16. (a) Write a program to read a string and reverse it without using inbuilt function.   3

    (b) Write a note on Shell Sort.   2