

YMCA UNIVERSITY OF SCIENCE & TECHNOLOGY, FARIDABAD**M.SC MATHEMATICS SEMESTER II****PROGRAMMING IN C++ (MTH 510)**

Time: 3 Hours

Max. Marks:60

- Note:* 1. It is compulsory to answer the questions of Part -1. Limit your answers within 20-40 word in this part.
2. Answer any four questions from Part -2 in detail.
3. Different parts of the same question are to be attempted adjacent to each other.
4. Assume suitable standard data wherever required, if not given.

PART -1

- Q1 (a) What are access specifiers? (2)
- (b) What are inline functions? (2)
- (c) What do you mean by a class? (2)
- (d) Define the hierarchy of stream classes in C++. (2)
- (e) What do you mean by Friend Classes? (2)
- (f) What are extraction & insertion operators? (2)
- (g) Define overriding? (2)
- (h) Define Abstraction. (2)
- (i) What are Control structures in C++? (2)
- (j) Write the syntax for defining member functions outside the class. (2)

PART -2

- Q2 Define Polymorphism. What are its different types? Compare both of them with example. (10)
- Q3 (a) Write a program to overload > operator (5)
- (b) Write a program to convert class type data to basic type data (5)
- Q4 (a) What are constructors & destructors? Illustrate with examples. (5)
- (b) Write a program to demonstrate call by value & call by reference in C++. (5)
- Q5 Write a program to open multiple files for writing and reading. (10)
- Q6 (a) What are virtual functions? Explain their need with example. (5)
- (b) Write a program to declare a class where a friend function is declared to swap two variables values and display their result using display function as member function. (5)
- Q7 Write a program to declare a class with hour, minutes as data members and readtime & showtime are the member function. Define two objects of the above defined class and print their sum. (10)