(Com. to CSE, IT)

Time: 3 hours Max. Marks: 70

Note: 1. Question Paper consists of two parts (Part-A and Part-B)

- 2. Answer ALL the question in Part-A
- 3. Answer any **THREE** Questions from **Part-B**

### PART-A

- 1. a) Define stream
  - b) What are the principles of function overloading?
  - c) With a sample program create an array of objects?
  - d) Give three operators that cannot be overloaded?
  - e) What are the advantages of inheritance?
  - f) What are the advantages of templates?

- 2. What the concepts are of object oriented programming? Explain in detail
- 3. Write a C++ program to find the area of a circle, rectangle and triangle using function overloading?
- 4. What is a friend function? Write a C++ program to add two complex numbers using friend functions?
- 5. a) What is copy constructor? Explain
  - b) Discuss about anonymous objects?
- 6. a) Explain about virtual base class?
  - b) Explain about virtual destructors?
- 7. a) Explain about file manipulators?
  - b) Explain about adaptors in C++?

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### PART-A

- 1. a) Define class and object?
  - b) What are the advantages of inline function?
  - c) Give function prototype of a function **foo** which is having two objects of class **sam** as arguments and returning reference of an object as parameter?
  - d) Give the order of calling of constructors?
  - e) What are iterators?
  - f) What are the different file opening modes?

- 2. Differentiate between C and C++ programs? Illustrate with sample programs?
- 3. a) Explain about scope resolution operator?
  - b) Discuss about name space?
- 4. Write a C++ Program to demonstrate the usage of static data member and static member function?
- 5. Write a c++ Program to overload + operator to add two matrices using friend functions?
- 6. a) Explain about function overriding?
  - b) What are the rules for virtual functions?
- 7. What is an Exception? Explain about try, throw and catch with example?

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### PART-A

- 1. a) Give examples of user defined manipulators?
  - b) With a sample program explain about default arguments?
  - c) Define friend function?
  - d) Can we have more than one constructor in a class? Discuss?
  - e) Explain about Pure virtual function?
  - f) Explain about container classes?

- 2. a) What are the member functions of istream class?
  - b) Discuss about flags without bitfields?
- 3. With a sample program explain the concept of return by reference?
- 4. a) Can we overload member function? Illustrate?
  - b) Explain about constant classes?
- 5. Write a C++ Program to copy the contents of one object into another using copy constructor?
- 6. Define inheritance? Explain different types of inheritance?
- 7. Write a c++ Program to add two integers, two floats and two complex numbers using class templates?

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### **PART-A**

- 1. a) Discuss about the structure of C ++ program?
  - b) Discuss about 4 operators in C++ which are not present in C?
  - c) C++ allows nested classes are not? If Possible give an example?
  - d) What is the purpose of destructor?
  - e) Define abstract class?
  - f) Define staic binding?

- 2. a) Discuss about formatted console I/O operations and unformatted console I/o operations
  - b) Explain about manipulators?
- 3. Write a C++ Program to swap two number s using call by value, call by reference and call by address mechanism?
- 4. a) Explain about static classes?
  - b) What happens if we declare all member functions as private in a class?
- 5. Write a C++ program to overload two increment operators (pre and post)?
- 6. Define virtual function? Illustrate with a C++ Program?
- 7. a) What are the principles of exceptional; handling? Explain
  - b) Explain the need of templates?