END TERM EXAMINATION

SECOND SEMESTER [MCA] MAY-2011

Paper code: MCA 104 Subject: Object Oriented in C++

Q1 (a) What is object-oriented paradigm? Explain various features of OOP.

(b) What is function overloading? Explain with the help of example.

(c) What is polymorphism? Write a program to overload the + operator for manipulating objects of distance class.

(d) What is inheritance? What are base and derived classes? Give suitable examples for inheritance.

(e) What are exceptions? What are the construct supported by c++ to handle exceptions. (4*5=20)

UNIT 1

Q2 (a) What are differences between structure and classes in C++? (3)

(b) Write a program for processing objects of the student class. Declare member function such as show () and read (). (5)

(c) Explain the different methods of passing object parameters. (2)

Q3 (a) What is data hiding? What are the different, mechanisms for protecting data from the external users of a class's objects? (5)

(b) Write a program for manipulating coordinates in a rectangle coordinate system. Represent points as objects. The class point must include members such as X and Y(as data members) and add, sub(), angle() (as member functions) (5)

UNIT 2

Q4 (a) What are the constructors and destructors? Explain how they differ from normal functions? (4)

(b) Write a program for manipulating matrices overloading operators + and -. (6)

Q5 (a) What is operator overloading? Explain the importance of operator overloading.(5)

(b) Write a program to model time class using constructors. (5)

UNIT 3

Q6 (a) Consider an example of declaring the examination result. Design three classes: student, exam and result. The student class has data members such as those representing roll number, names etc. Create the class exam by inheriting the student class. The exam class adds data members representing the marks scored in six subjects. Derive the Result from Exam class and it has its own data members such as total_ marks. Write an interactive program to model this relationship. (8)

(b) What are pure virtual functions? How do they differ from normal virtual function? (2)

Q7 (a) What is visibility mode? What are the different types of visibility modes supported by C++? (5)

(b) Explain the concept of dynamic binding? How is it different from static binding? (3)

(c) What are the different forms of inheritance supported by C++.Explain any 2 of them.

UNIT 4

Q8 (a) What is generic programming? What are its advantages and state some of its applications? (4)

(b) What is a class template? Explain the syntax of a class template with suitable examples. (6)

Q9 (a) What is a function template? Write a function template for finding the largest number in a given array. The array parameter must be of generic data types.(6)

(b) Write a short note on standard template library. (4)