

GUJARAT TECHNOLOGICAL UNIVERSITY**MCA - SEMESTER-II • EXAMINATION – WINTER • 2014****Subject Code: 2620002****Date: 01-12-2014****Subject Name: Object Oriented Programming Concepts and Programming****Time: 02:30 pm - 05:00 pm****Total Marks: 70****Instructions:**

1. Attempt all questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.

- Q.1 (a)** Answer following questions in brief : **07**
1. What is cin and cout?
 2. What is the difference in character array storage in c-language and C++?
 3. What does it mean by inline function?
 4. When member functions of class will get the memory?
 5. What is the use of ios function precision() ?
 6. Define Abstract class
 7. What is static member function?
- (b)** Define following terms : **07**
1. Typeid operator
 2. Mutable
 3. Protected
 4. Const_cast operator
 5. Function overriding
 6. Instantiation
 7. Data Encapsulation
- Q.2 (a)** 1. What do you mean by exception handling? Explain catch(...) with suitable example. **04**
2. Explain with example : How to use private member function of a class **03**
- (b)** Demonstrate the order of invocation of constructors and destructors in multiple inheritance with suitable example. **07**
- OR**
- (b)** Create a class with name Electronics as a base class. It contains brand name, manufacturing_year and price as member data. Also define necessary constructors and member functions. Now derive Television, Computer and Air conditioner classes from above base class. Television class is derived in CRT and LCD classes. Air conditioner class is derived in Window and Split classes. In the main, create objects of CRT and Window classes. Define necessary members in all above classes. **07**
- Q.3 (a)** 1. Explain all manipulator functions defined in ios class with suitable example. **04**
2. Write short note on default arguments. **03**
- (b)** How can we achieve runtime polymorphism? – explain with suitable example. **07**
- OR**
- Q.3 (a)** 1. Explain operators used in dynamic memory allocation with example. **04**
2. Write short note on friend function. **03**
- (b)** List all types of Inheritance. Explain Hybrid inheritance with suitable example. Also explain “Initialization list” and “Ambiguity error and solution” with example. **07**

- Q.4 (a)** List and explain all the functions for Random access of a file. **07**
- (b)** 1. Demonstrate User defined manipulator with example. **04**
 2. What does it mean by rethrowing an exception? Explain with example. **03**
- OR**
- Q.4 (a)** 1. What do you mean by open mode bits? List and explain all open mode bits used in file handling. **07**
- (b)** 1. Demonstrate the use of > operator with suitable example. **04**
 2. Write short note on command line arguments. **03**
- Q.5 (a)** Define a class template Stack that supports int, float, double and Item class. Define all member functions to manage Stack. Item class contains itemID, itemDesc, unitPrice, Qty and necessary member functions. **07**
- (b)** Define Vector class with following members : **07**
 Member data : int size, int *v
 Member functions : Vector(), Vector(int *, int), Vector(int), getValues(), showVector(), == operator, << operator to display vector values in (.,.,.,.) format.
- OR**
- Q.5 (a)** 1. Explain with example : member function template. **03**
 2. Write a function template for selection sort to support int, float and double data types. **04**
- (b)** What is the use of operator overloading? Explain overloading of prefix ++ and postfix ++ operator with suitable example. **07**
