

GUJARAT TECHNOLOGICAL UNIVERSITY

MCA. Sem-II Remedial Examination December 2010

Subject code: 620003

Subject Name: Object oriented Concepts & Programming

Date: 18 / 12 / 2010

Time: 10.30 am – 01.00 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) 1. Write the different ways of writing function prototypes. Find errors, if any in the declaration - `int mul(int a,b);` 03
 2. What is the use of parameterized constructor? Define dynamic constructor. What is the difference between following two statements if integer is a class and `integer(int x, int y)` is the constructor method. `integer int1 = integer(0,100);`
`integer int1(0,100);` 04
- (b) 1. What is operator overloading? What is the difference if friend function is used in the place of member functions for overloading binary operator? 03
 2. How type conversion from a class to basic type is performed? Which conditions casting operator function should satisfy? Can the constructor `student (int rollno, double percentage)` for class student be used to convert types? 04
- Q.2**
- (a) 1. Explain keyword “this” in C++ language. What are the applications of this pointer? 03
 2. Explain the manipulators provided in the header file `iomanip` that can be used to manipulate the output formats. Explain how a user can create his own manipulator. 04
- (b) 1. What is the difference between opening a file with a constructor function and opening a file with `open()` function? When is one method preferred over the other? 03
 2. What is an abstract class? What is virtual base class? 04
- OR**
- (b) 1. What is the difference between overloaded functions and function templates? 03
 Justify - Is this a legal statement –
`Template<class T1, class T2>`
`Class Test`
`{`
`};`
2. What is an exception? When does a program throw an exception? What should be placed inside a try block? What should be placed inside a catch block? 04
- Q.3**
- (a) 1. What is Standard Template Library(STL). Which three types of containers are there in STL? 03
 2. What is the use of keyword “namespace”? Explain with example how to define a namespace. 04
- (b) 1. Describe the set of classes that define the file handling methods the I/O system of C++ contains. 03
 2. Explain under what circumstances the following statements would be used? 04
 (i) `throw;`
`catch(...)`

OR

- Q-3 (a)** 1. Explain with example the types of get() functions. **03**
 2. What are the different types of inheritance? **04**
- (b)** 1. When a function will be made inline? Why? How does it differ from preprocessor macro? **03**
 2. What is a copy constructor? What is the difference between the following statements? **04**
 Integer I2(I1);
 I2=I1;

- Q-4 (a)** 1. Explain static member variable and member function. **03**
 2. Explain with example how to overload unary operators. **04**
- (b)** 1. What is a virtual function? When do we make a virtual function “pure”? What is a function template? **03**
 2. Which containers are supported by Standard Template Library (STL)? **04**

OR

- Q-4 (a)** 1. What is a file mode? Describe the various file mode options available. **03**
 2. What is the role of following functions? seekg() , seekp() tellg(), tellp() **04**
- (b)** 1. How can a necessary width of a field be defined for the output of an item with ios member function? **03**
 2. Which functions can be used for reading a string? **04**

- Q-5 (a)** 1. How can the address of a member of a class be assigned to a pointer **03**
 2. When a member function can be called const member function? **02**
 3. What is the purpose of local class? **02**
- (b)** 1. A function can also return a reference – explain. **03**
 2. How can you pass object as a function argument? **04**

OR

- Q-5 (a)** 1. Explain constant pointer and pointer to constant. What is the use of const qualifier? **03**
 2. What is the difference between a structure and a class in C++? **02**
 3. How does a class accomplish data hiding? **02**
- (b)** 1. What is the role of destructor? How it is defined and when it is invoked? **03**
 2. How is polymorphism achieved at (i) compile time and (ii) run time? **04**
