

GUJARAT TECHNOLOGICAL UNIVERSITY
MCA - SEMESTER-II • EXAMINATION – WINTER 2013

Subject Code: 2620002**Date: 26-12-2013****Subject Name: Object Oriented Programming Concepts & Programming****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) Select most appropriate answer: 07

- i. What does C++ append to the end of a string literal constant?
 - a. a space
 - b. a number sign (#)
 - c. an asterisk (*)
 - d. a null character ('\0')
- ii. An array name is a _____
 - a. subscript
 - b. formal parameter
 - c. memory address
 - d. prototype
- iii. The number 5.5e3 is a _____ constant
 - a. character literal
 - b. named literal
 - c. numeric literal
 - d. string literal
- iv. Of the three ways to pass arguments to functions, only passing by _____ and passing by _____ allow the function to modify the argument in the calling program
 - a. reference, pointer
 - b. array, location
 - c. array, pointer
 - d. None of the above
- v. The return type you code for all constructors is _____
 - a. void
 - b. the class type
 - c. the same type as the first data member defined in the class
 - d. no type
- vi. A destructor takes
 - a. One argument
 - b. Two argument
 - c. Three argument
 - d. Zero argument
- vii. The compiler determines the type used in a template function via _____
 - a. the name of the function
 - b. the first variable declared within the function
 - c. the type of the argument passed to the function
 - d. the type of the value returned from the function

(b) State whether following statements are TRUE or FALSE. 07

- i. It is legal to make objects of one class as a members to another class.
- ii. Base class and derived class cannot have same function names with same signature
- iii. Protected data members of base class can be used upto n levels of

- derived class if classes are derived publicly from base class
- iv. To specify function as a pure virtual function we can use “=0”
- v. In C++ we can implement virtual constructors but we cannot implement virtual destructors.
- vi. Objects of base class and derived class are said to be type compatible.
- vii. List is a sequence container.

- Q.2** (a) i. What is Error Handling with reference to File IO? Explain with suitable program. **04**
- ii. Briefly discuss entities container, algorithm and iterators with respect to STL. **03**
- (b) What do you mean by Function Template Overloading? **07**
- OR**
- (b) Explain Class Template. **07**
- Q.3** (a) i. What is nested namespace? **03**
- ii. Write a program to identify the object during run time. Briefly Explain the concept used. **04**
- (b) i. List functions to manipulate floating point precision. Write a program to demonstrate their use. **03**
- ii. Explain containership with suitable example. **04**
- OR**
- Q.3** (a) i. How do you extend a namespace? **03**
- ii. What is ‘this’ pointer? What are its applications in C++ programs? Write a program to demonstrate at least one application. **04**
- (b) i. Write a program to demonstrate left, right justification and padding characters. **03**
- ii. Write and explain a program to demonstrate constructors and destructors with reference to inheritance. **04**
- Q.4** (a) i. Explain exception handling mechanism. **03**
- ii. What do you mean by inline functions? **04**
- (b) i. Differentiate constructor and destructor. **03**
- ii. Explain static data member. **04**
- OR**
- Q.4** (a) i. What is the process of handling unexpected exceptions? **03**
- ii. Justify the statement : ‘ set_value() = 10;’ **04**
- Q.4** (b) i. Explain constructor overloading. **03**
- ii. Explain ‘.*’ and ‘→*’ operators with suitable example. **04**
- Q.5** (a) Create a class called time12 having member data pm of type bool (true=pm & false=am), hrs and mins of type int. Define necessary constructors and display12() function display time in 12H format (i.e. 10.35 pm). Create another class called time24 having member data hours, minutes and seconds of type int. Define necessary constructors and display24 function to display time in 24H format (i.e. 22:15:10). Write a conversion routine to convert 24H format of time to 12H format. **07**
- (b) Write a program to demonstrate overloading of ++ operator to convert given string to uppercase. (Assume necessary class with member data and member functions). **07**

OR

- Q.5** (a) Create a class called Distance having member data feet and inches of type int and float respectively. Define necessary constructors and getDistance() function to enter feet and inches and putDistance() function to print feet and inches in proper format (i.e. 5'-3"). Write a routine to convert given measurement in meters of type float to an object of Distance class and vice-versa. **07**
- (b) Write a program to demonstrate overloading of + operator to add two objects of matrix class. (Assume necessary class with member data and member functions). **07**
