

Seat No.: _____

Enrolment No. _____

GUJARAT TECHNOLOGICAL UNIVERSITY
MCA - SEMESTER-II • EXAMINATION – SUMMER • 2014

Subject Code: 620003

Date: 17-06-2014

Subject Name: Object Oriented Concepts and Programming (OOCp)

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. State True/False It is must to justify your answer. **[07]**
(a)

- (1) Friend functions have access to only public members of a class.
- (2) Using the operator overloading concept, we can change the meaning of an operator.
- (3) Wrapping up of data of different types into a single unit is known as inheritance
- (4) cin and cout are built-in functions.
- (5) The main advantage of width() function is that we can use one width specification for more than one items.
- (6) Constructors return void value.
- (7) The objects of **std** namespace cannot be used without writing '**using std**' in the beginning of the program.

(b) What is function overloading and function overriding? Explain with example. **[07]**

Q.2. What do you mean by function template and class template? Explain the need for creating function and class templates by giving example. **[07]**
(a)

- (b)** **(1)** Explain the functions used for random access of file. **[03]**
(2) What is reference data type? Explain with example. **[04]**

OR

(b) What is an Inline function? How is it different than normal function? What are the restrictions for inline function? Give examples of creating inline function in two different ways. **[07]**

Q.3.(a) **(1)** How is the memory allocated to the object of a class? Explain with example. **[04]**
(2) Explain dynamic initialization of variables in C++ with example **[03]**

(b) Write a program to convert from Feet object to Inch object and vice versa. Overload << to display the result of conversion in both classes. **[07]**

OR

Q.3. **(1)** 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]**
(a)

(2) 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]**

(b) Explain Manipulators with example. **[07]**

Q.4. **(1)** Which storage class data member is having single copy of variables for all objects? **[04]**
(a) Describe with appropriate example.

(2) Briefly discuss entities container, algorithm and iterators with respect to STL. **[03]**

- (b) What is a namespace? Why is it required to be used? Explain various ways of using members of a namespace in the program. What are unnamed namespaces? [07]

OR

- Q.4.(a)** (1) Explain containership with suitable example. [04]
(2) Explain friend function with example. [03]

- (b) What is Exception? What are the benefits of exception handling through C++? Explain how exception handling is implemented in C++ using an example. [07]

- Q.5.** What are constructors? Explain different type of constructors and give example of a dynamic constructor. What is the advantage of having a dynamic constructor? [07]

- (b) Create a class matrix to represent the matrix. Assume necessary data and member functions. Use constructors to initialize matrix objects. Overload insertion and extraction operators to take input for a matrix object and display a matrix object. Also overload operator + to add two matrix objects. [07]

OR

- Q.5.** Explain the following terms [07]

- (a) 1) explicit 2) mutable 3) this 4) static 5) friend 6) const_cast 7) protected

- (b) Explain Member Initialization List in detail. [07]
