

GUJARAT TECHNOLOGICAL UNIVERSITY
MCA - SEMESTER- IV EXAMINATION – WINTER - 2018

Subject Code: 4440601**Date: 29/11/2018****Subject Name: C++ with class libraries (CPP)****Time: 02:30 P.M. to 5:00 P.M.****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 the following questions:- **07**
- (i) Write short note on member function and static function. **04**
 - (ii) Differentiate between pointer to object and call by reference. **03**
- (b) Define following terms with example **07**
- (i) Default parameter **02**
 - (ii) Local class **02**
 - (iii) typeid **03**
- Q.2** (a) Write down various types of constructors in C++ with the help of suitable example. **07**
- (b) Differentiate between following : **07**
- (i) call by reference and return by reference. **03**
 - (ii) const , volatile and static function. **04**
- OR**
- (b) Explain all types of inheritance along with access modifier with suitable example. **07**
- Q.3** (a) Compare function overloading and function overriding with the help of suitable example. **07**
- (b) Differentiate between function template and class template along with example. **07**
- OR**
- Q.3** (a) Write a program to create user define data type Rational {numerator, denominator} and overload <<, >> and + operator to read, print a rational number and add two rational number respectively. **07**
- (b) Answer the following questions **07**
- (i) Compare text file and binary file. **04**
 - (ii) Write down various file opening modes. **03**
- Q.4** (a) What is the need of exception handling? Explain try, catch and throw with the help of suitable example. **07**
- (b) Answer the following questions **07**
- (i) Explain namespace, nested namespace and unnamed namespace with the help of suitable example. **04**
 - (ii) Write an example of creating user define manipulator. **03**
- OR**
- Q.4** (a) What is RTTI? Explain dynamic_cast and typeid with the help of suitable example. **07**
- (b) Write down various applications of standard template library. **07**

- Q.5 (a)** Write down features of Object oriented programming. **07**
- (b)** Answer the following questions **07**
- (i) Explain this pointer and virtual destructor in detail. **04**
 - (ii) Write down an example to overload ++ operator. **03**
- OR**
- Q.5 (a)** What is the importance of member initialization list and destructor? Explain with the help of suitable example. **07**
- (b)** Create a abstract class Shape having pure virtual function area ().Override area function in derived class Circle and Triangle. Demonstrate sample test cases in main function. **07**
