

- (ii) Why is it necessary to overload an operator ? 6
- (iii) When do we use multiple catch handlers ? 4
7. (i) Explain 'Operator Overloading'. Discuss its rules. 8
- (ii) What are the advantages of using exception handling mechanism in a program ? 8

**UNIT – IV**

8. (i) What is function template and what are the advantages of function template ? 8
- (ii) With suitable example, explain how a template function is overloaded with an explicit function. 8
9. (i) How many types of iterators are there in C++ STL ? Explain input and output iterators each with an example. 8
- (ii) What is an algorithm ? How STL algorithms are different from the conventional algorithms ? 8

Roll No. ....

**67045**

**MCA 1st Semester Last Session Dec.-15**  
**(With New Notes)**

**Examination – December, 2016**

**OBJECT ORIENTED PROGRAMMING USING C++**

**Paper : MCA-105**

***Time : Three Hours ] [ Maximum Marks : 80***

*Before answering the questions, candidates should ensure that they have been supplied the correct and complete question paper. No complaint in this regard, will be entertained after examination.*

**Note :** Attempt *five* questions in all. Question Number 1 is *compulsory*. Attempt *four* more questions, selecting *one* question from each Unit.

1. (a) What does polymorphism mean in C++ language ?
- (b) Discuss the benefits and applications of OOPs.
- (c) What is a class ? Describe the syntax for declaring a class with example.

- (d) Differentiate between static and dynamic polymorphism.
- (e) How are data and functions organized in an object-oriented program?
- (f) Describe briefly the features of I/O system supported by C++.
- (g) What do you mean by dynamic binding?
- (h) How is a member function of a class defined?

8 × 2 = 16

#### UNIT – I

2. (i) What do you mean by polymorphism in C++ ?  
How is it achieved at : 8
- (a) Compile time
- (b) Runtime
- (ii) Discuss the benefits and applications of OOPs. 8

3. (i) When do you mean by overloading of a function? When do we use this concept? 4
- (ii) Explain how objects are passed to and returned from a member function using pointer. 8
- (iii) With suitable example, explain how a function is invoked using pointer. 4

#### UNIT – II

4. (i) What is a constructor? Describe the types of constructor each with an example. 8
- (ii) What is a member function? Explain the advantages and disadvantages of declaring member function inside and outside the class. 8
5. (i) Write C++ program to overload '+' and '-' to find the sum and difference of two time value given in HH:MM:SS format. 8
- (ii) What are the different forms of inheritance? Give an example for each. 8

#### UNIT – III

6. (i) What is an exception specification? When is it used? 6