



**LOYOLA COLLEGE (AUTONOMOUS), CHENNAI – 600 034**

**B.Sc.DEGREE EXAMINATION –COMPUTER SCIENCE**

**THIRD SEMESTER – APRIL 2019**

**16/17UCS3MC02– OBJECT ORIENTED PROGRAMMING USING C++**

Date: 25-04-2019  
Time: 01:00-04:00

Dept. No.

Max. : 100 Marks

**PART – A**

**ANSWER ALL QUESTIONS**

**(10 x 2 = 20 marks)**

1. List down the benefits of Object oriented programming.
2. Differentiate Call by value and Call by reference.
3. Write the general format of a class declaration with suitable example.
4. What is static function? Give an example.
5. What is copy constructor? Give an example.
6. List down the rules for overloading operators.
7. Define dynamic binding.
8. What is an abstract class?
9. Write the syntax to open a file?
10. What do we mean by function templates?

**PART – B**

**ANSWER ALL QUESTIONS**

**(5 x 8 = 40 marks)**

**11. a) Explain Data Abstraction and Encapsulation with example. (8)**

**(Or)**

**b) Explain different categories of control structures with suitable examples.(8)**

**12. a) Write a C++ program to use function overloading to find the volume of different Geometric figures.(8)**

**(Or)**

**b) What is the need for array of objects? How multiple objects are accessed?  
Give an example.(8)**

**13. a) Specify a class called complex to represent the real and imaginary parts of a complex number. Overload the '+' and '-' operators so as to act on objects of the above class. Also rewrite class specification so that the above functions to overload**

are replaced by functions `addcom` and `andsubcom`. How can these functions be made friend functions? Write a main program and illustrate. **(8)**

**(Or)**

b) Why it is necessary to use friend function to overload the binary operators.(8)

14.a) Write a C++ program for implementing hybrid Inheritance.**(8)**

**(Or)**

b) What is pure virtual function? What are the implications of making a function pure virtual function? Explain with example. **(8)**

15. a) Explain in detail about formatted console I/O operations.**(8)**

**(Or)**

b) Explain elaborately about exception handling mechanism with example.**(8)**

### **PART – C**

**ANSWER ANY TWO QUESTIONS**

**(2 x 20 = 40 marks)**

16. a) Explain in detail about different types of constructors with suitable programs.(10)

b) Briefly explain about the syntax of a class template with suitable program.**(10)**

17. a) Explain in detail about various types of inheritance with suitable program. **(10)**

b) Explain how objects can be used as function argument. Give an example.**(10)**

18. a) What is function template? Write a program to sort an array of different types of data using function template. **(10)**

b) Define a class to represent a bank account. Include the following data members and member functions. Data members: Name of the depositor, Account number, Type of account, Balance amount. Member functions: To assign initial value. To deposit an amount, To withdraw an amount after checking the balance, To display the name and the balance amount. Write a C++ code to implement the above.(10)

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