Roll No. ……..

MCA–10/M.Sc.IT–10

Object Oriented Programming Through C++

Master of Computer Application/Master of Science in Information Technology

(MCA–16/MCA–11/M.Sc.IT–16/M.Sc.IT–12)

Third Semester, Examination, 2017

Time : 3 Hours **Max. Marks : 60**

Note : This paper is of **sixty (60)** marks containing **three (03)** sections A, B and C. Attempt the questions contained in these sections according to the detailed instructions given therein.

Section–A

(Long Answer Type Questions)

Note : Section 'A' contains four (04) long answer type questions of fifteen (15) marks each. Learners are required to answer *two* (02) questions only.

1. (a) What is an abstract class ? Explain with suitable example.

   (b) Compare overloading and overriding with examples.

2. (a) What are driving factors of object oriented programming paradigm ? List the basic concepts of OOP.

(b) What are the file operations ? Explain each *one* with an example.

3. (a) Define Class, Nested class. How to declare a nested class ? Give an example.

   (b) What is encapsulation ? Demonstrate data hiding and encapsulation.

4. (a) Discuss different scenarios of constructor overloading in base and derived classes and explain their implementation.

   (b) What is significance of Virtual Destructor ?

Section–B

(Short Answer Type Questions)

Note : Section 'B' contains eight (08) short answer type questions of five (05) marks each. Learners are required to answer *four* (04) questions only.

1. What is an exception ? List the principles of exception handling.
2. How to handle array of objects using Constructor ? Explain.
3. What is meant by Copy Constructor ? Give an example.
4. Define Virtual Base Class.
5. What is inheritance ? What are different types of inheritance ? Explain with example.
6. Write a program for catching array out of bounds exception.

7. What is runtime polymorphism ?
8. What is Virtual function ? What are the rules for Virtual functions ?

Section–C

(Objective Type Questions)

Note : Section 'C' contains ten (10) objective type questions of one (01) mark each. All the questions of this section are compulsory.

1. Which of the functionality of 'Encapsulation' ?
   (a) Binds together code and data
   (b) Using single interface for general class of actions
   (c) Reduce Complexity
   (d) All of the mentioned
2. Which of the following is a mechanism by which object acquires the properties of another object ?
   (a) Encapsulation
   (b) Abstraction
   (c) Inheritance
   (d) Polymorphism
3. Which of the following supports the concept of hierarchical classification ?
   (a) Polymorphism
   (b) Encapsulation
   (c) Abstraction
   (d) Inheritance

4. Which of the following concept is often expressed by the phrase, 'One interface, multiple methods' ?

   (a) Abstraction

   (b) Polymorphism

   (c) Inheritance

   (d) Encapsulation

5. Variables declared outside a block are called _____.

   (a) Global

   (b) Universal

   (c) Stellar

   (d) External

6. The compiler converts your C++ instructions into _____.

   (a) edited code

   (b) object code

   (c) source code

   (d) translated code

7. When an object-oriented program detects an error within a function, the function _____.

   (a) throws an exception

   (b) throws a fit

   (c) catches a message

   (d) catches an exception

8. When a function includes a throw statement for errors, the call to the potentially offending function should be placed within a _____ block.
   (a) Throw
   (b) Try
   (c) Catch
   (d) Scope

9. The scope resolution operator is :
   (a) a comma
   (b) a semicolon
   (c) a colon
   (d) two colons

10. The feature in object-oriented programming that allows the same operation to be carried out differently, depending on the object, is_____.
   (a) Inheritance
   (b) Polymorphism
   (c) Overfunctioning
   (d) Overriding