

MCA–10/MSc.(IT)–10

Object-Oriented Programming Through C++
Master of Computer Application/Master of Science
in Information Technology
(MCA/MSc.IT–11/12/16/17)

Third Semester, Examination, 2017

Time : 3 Hours

Max. Marks : 80

Note : This paper is of **eighty (80)** 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 nineteen (19) marks each. Learners are required to answer *two* (02) questions only.

1. What is Object Oriented Programming ? What are the main characteristics of OOP ? Also describe its basic concepts. Compare Object Oriented Programming with Procedure Oriented Programming.
2. Define function overloading. Write a C++ program to define three overloaded functions to swap two integers, swap two floats and swap two doubles.

3. List the characteristics of a constructor. Write a C++ program to define a suitable parameterized constructor with default values for the class distance with data members being feet and inches.
4. Differentiate between class and structure. With an example explaining the syntax for defining a class.

Section-B

(Short Answer Type Questions)

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

1. Write a Program to print all prime numbers from 1 to 300 using break and continue statements.
2. What do you mean by recursion ? Write a recursive function to find the nth term of Fibonacci Series.
3. Describe various types of inheritance in C++. Write a C++ program to illustrate multiple inheritance.
4. Explain the visibility of base class members for the access specifiers : private, protected and public while creating the derived class and also explain the syntax for creating derived class.
5. How does a constant defined by const differ from the constant defined by the #define ?
6. Discuss the concept of constructor overloading with suitable example.
7. What is the role of destructor ? Explain with example.
8. Define pure virtual functions. Write a C++ program to illustrate pure 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 following is the functionality of 'Data Abstraction' ?
 - (a) Reduce Complexity
 - (b) Binds together code and data
 - (c) Parallelism
 - (d) None of the mentioned
2. Which of the following mechanisms is/are provided by Object Oriented Language to implement Object Oriented Model ?
 - (a) Encapsulation
 - (b) Inheritance
 - (c) Polymorphism
 - (d) All of the mentioned
3. Which of these is 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
4. How will a class protect the code inside it ?
 - (a) Using Access Specifiers
 - (b) Abstraction
 - (c) Use of Inheritance
 - (d) All of the mentioned

5. Which of the following supports the concept of hierarchical classification ?
- (a) Polymorphism
 - (b) Encapsulation
 - (c) Abstraction
 - (d) Inheritance
6. Reusability is a desirable feature of a language as it :
- (a) Decreases the testing time
 - (b) Lowers the maintenance cost
 - (c) Reduces the compilation time
 - (d) Both (a) and (b)
7. Choose the correct remarks :
- (a) C++ allows any operator to be overloaded
 - (b) Some of the existing operators cannot be overloaded
 - (c) Operator precedence cannot be changed
 - (d) All of the above
8. Runtime polymorphism is achieved by :
- (a) Virtual function
 - (b) Some of the existing operators cannot be overloaded
 - (c) Operator overloading
 - (d) Function overloading

9. The process of extracting the relevant attributes of an object is known as :
- (a) Polymorphism
 - (b) Inheritance
 - (c) Abstraction
 - (d) Data hiding
10. Exception handling is targeted at :
- (a) Run-time error
 - (b) Compile time error
 - (c) Logical error
 - (d) All of the above

