

Roll No.

MCA–10/M.Sc.IT–10/MIT(CS)–103

Object-Oriented Programming Through C++/ Object-Oriented Programming Using C++

Master of Computer Applications/
Master of Science in Information Technology/
Master of Science (Cyber Security)
(MCA/M.Sc.IT–11/12/16/17/MSCCS–18)

Third Semester, Examination, 2018

Time : 3 Hours

Max. Marks : 80

Note : This paper is of **eighty (80)** marks containing **three (03)** Sections A, B and C. Learners are required to 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. Write a program in C++ to create two classes DM and DF which store the value of instances. DM stores distances in metres and centimeters. DF stores distances in feet and inches. Read values for the class objects and add one object of DM with another object of DF. The object that stores the results may be a DM Object or DF Object, depending on the units in which the results are required. Assume :
1 metre = 100 centimeters

(B-67) P. T. O.

1 ft = 12 inches

30 centimeters = 1 ft

1 inch = 2.5 centimeters

The display should be in the format of feet and inches or metres and centimeters depending on the object on display.

2. What is multiple inheritance ? Discuss the ambiguity in multiple inheritance. Give an example.
3. Develop a program in C++ to create a database of the personal information system containing :

name

Date of Birth

Blood group

Height, weight

Insurance Policy Number

Contact Address

Telephone Number

Driving License Number

Your program should be capable to do the following :

- (a) List a table
 - (b) Insert a new entry
 - (c) Edit entry
 - (d) Search for record to be printed.
4. Define copy constructors and destructors. What are the important features of a constructor functions ? Also discuss with example how dynamic initialization of objects is achieved.

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. Why is C++ called object oriented programming language ?
2. What is Class ? How is it used to hide data ?
3. What does polymorphism mean in C++ language ?
4. Explain the virtual functions and their importance.
5. Define a Class String. Use overloaded = operator to compare two Strings.
6. Write a program in C++ to implement the concept of Virtual base class.
7. What is function overloading ?
8. Describe the various file mode options available. Explain them by giving example.

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. Do...while loop checks the condition on :
 - (a) top
 - (b) bottom
 - (c) middle
 - (d) None of the above

2. C++ standard library contains :
 - (a) classes
 - (b) functions
 - (c) objects
 - (d) None of the above
3. A Structure is :
 - (a) user defined type
 - (b) aggregate of many types
 - (c) has a name tag
 - (d) None of the above
4. 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
5. Dynamic allocation of memory is achieved through :
 - (a) delete keyword
 - (b) new keyword
 - (c) vector
 - (d) None of the above
6. An inline function is :
 - (a) prefixed with keyword inline
 - (b) declared and defined inside the main()
 - (c) prefixed with inline on the header and defined outside the class
 - (d) None of the above

7. Static member functions are :
 - (a) common to a class
 - (b) independent to any object
 - (c) accessed by prefixing class name
 - (d) All of the above
8. Function overloading is possible :
 - (a) when signatures match
 - (b) when function names match
 - (c) when function names match and signature does not match
 - (d) None of the above
9. Operator overloading is possible with :
 - (a) overload casting operator
 - (b) constructor
 - (c) friend function
 - (d) None of the above
10. Which of the following is not a valid loop structure in C++ ?
 - (a) for
 - (b) while
 - (c) do-while
 - (d) repeat-until