MCA-10/M.Sc.IT-10

Object Oriented Programming Through C++

Master of Computer Application/Master of Science in Information Technology (MCA/M.SC.IT-11/12/16/17)

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. Define Operator Overloading. Write a C++ program to define three overloaded operators in a program.
- 2. With the help of an example, explain how data hiding and encapsulation characteristics are achieved in C++.
- 3. How are structures in C different from a Class ? What is meant by dynamic initialization of a variable ? Explain how memory is allocated to Classes and Objects.
- 4. How does C++ use the concept of reusability ? Write a program in C++ to illustrate use of Polymorphism.

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. Differentiate between Class and Structure with an example.
- 2. What do you mean by recursion ? Write a recursive function to find the *n*th term of a Fibonacci series.
- 3. Explain how new and delete operators manage memory allocation/deallocation dynamically.
- 4. Explain types of Inheritance in C++. Give an example of each.
- 5. Write a program to print all prime numbers from 1 to 300 using Break and Continue statements.
- 6. Write a program to sort a list of strings into alphabetical order using an array of pointers.
- 7. What is the difference between 'call by reference' and 'call by parameter'?
- 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 cannot be friend ?
 - (a) Function

- (b) Class
- (c) Object
- (d) Operator function
- 2. 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
- 3. Which of the following terms is used for a function defined inside a class ?
 - (a) Member variable
 - (b) Member function
 - (c) Class function
 - (d) Classic function
- 4. Which of the following types of class allows only one object of it to be created ?
 - (a) Virtual class
 - (b) Abstract class
 - (c) Singleton class
 - (d) Friend class
- 5. Which of the following supports the concept of hierarchical classification ?
 - (a) Polymorphism
 - (b) Encapsulation
 - (c) Abstraction
 - (d) Inheritance

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- 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. Which of the following is not a type of constructor ?
 - (a) Copy constructor
 - (b) Friend constructor
 - (c) Default constructor
 - (d) Parameterized constructor
- 8. Which of the following concept of OOPs allows compiler to insert arguments in a function call if it is not specified ?
 - (a) Call by value
 - (b) Call by reference
 - (c) Default arguments
 - (d) Call by pointer
- 9. Exception handling is targetted at :
 - (a) Runtime error
 - (b) Compile time error
 - (c) Logical error
 - (d) All of the above
- 10. Which of the following concepts means determining at runtime what method to invoke ?
 - (a) Data hiding
 - (b) Dynamic typing
 - (c) Dynamic binding
 - (d) Dynamic loading

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