

**MCA Sem.-1 Examination**  
**Object Oriented Concepts & Prog**  
**January-2025**

Time : 3-00 Hours]

[Max. Marks : 50

**Instructions:**

- Write both the Sections in the separate answer book.
- Both Sections having equal weightage.
- Draw Diagrams wherever necessary.
- Make Assumptions wherever necessary.

**SECTION – I**

- Q-1 Explain the following terms:** **09**
- a. Encapsulation and Data Hiding
  - b. Namespace
  - c. Template Function
- Q-2 Attempt the following. (Any Two)** **08**
1. What is generic programming? How we can use multiple generic type in class template?
  2. What is operator overloading? Define the rules of operator overloading? Write a syntax to overload unary and binary operators.
  3. Why we require to overload operator using friend function? Explain with an example.
- Q-3 Attempt the following :** **08**
1. Demonstrate the use of copy constructor with an example.
  2. Write a note on different access specifiers used in class.

**OR**

- Q-3 Attempt the following :**
1. What do you mean by default argument in function? What is the significance of default arguments? Explain with an example.
  2. What is user defined conversion? Demonstrate four cases of user defined conversion.

**SECTION – II**

- Q-4** What is inheritance? Explain derivation using public, private and protected access modifiers? List out different type of inheritance and explain in brief with an example? Also discuss the problem with multiple inheritance in detail. **09**

(P.T.O)

- Q-5 Attempt the following: (Any Two) 08**
1. How to achieve run time polymorphism using virtual functions?  
Is virtual destructor necessary? Justify.
  2. Mention the stream classes hierarchy in C++. Explain manipulators in details. How to define and use user defined manipulator?
  3. Write down a note on reading and writing functions for file handling.
- Q-6 Write a note on following: (Any Two) 08**
1. Generic Algorithms and Containers
  2. Abstract class and pure virtual function
  3. IO modes in file

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