

MSc AIML Sem.-1 Examination

Object Oriented Concepts & Prog Using C++

Time : 3-00 Hours]

January-2025

[Max. Marks : 100

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 with an appropriate example: 18

- a. Encapsulation
- b. Data Abstraction
- c. Scope Resolution Operator

Q-2 Attempt the following : 16

- a. Differentiate Object Oriented Programming and Object based Programming. Also discuss concepts of Object Oriented Programming in brief.
- b. Discuss the role of constructors in C++. Write a short note on User defined Constructors and its types.

OR

Q-2 Attempt the following : 16

- a. Explain class in C++. Also discuss and differentiate Private member function and Public member function by illustrating suitable example.
- b. Explain cin and cout with necessary figures. Explain cascading of insertion and extraction operator.

Q-3 Attempt the following : 16

- a. Explain and elaborate the use of Relational operators and Logical operators.
- b. Discuss the importance of Friend function in C++. Also discuss the use of friend function used with class using suitable example.

OR

Q-3 Attempt the following : 16

- a. Compare and discuss entry controlled loop and exit controlled loop in C++.
- b. What is inline function? List down its merits and demerits and syntax using suitable example.

(P.T.O)

SECTION – II

Q-4 Explain the following Terms with an appropriate example. 18

- a. Reference variable
- b. New and Delete
- c. Sizeof()

Q-5 Attempt the following: 16

- a. Differentiate Type conversion and Type casting. Explain basic type to class type conversion.
- b. Discuss the importance of Operator overloading in C++. Discuss the use of *this pointer* in unary and binary operators overloading by giving proper example.

OR

Q-5 Attempt the following: 16

- a. Differentiate and discuss implicit type conversion and explicit type conversion. Explain one class type to another class type conversion.
- b. Define Operator overloading in C++. Discuss binary operator overloading implementing through friend function.

Q-6 Attempt the following: 16

- a. Define Inheritance. Discuss various types of implementation of Inheritance with proper example and codelet.
- b. Define polymorphism. Compare compile time polymorphism and run time polymorphism.

OR

Q-6 Attempt the following: 16

- a. Explain constructor in inheritance with example. Also discuss usage of base class constructor in C++.
- b. Define pure virtual function. Discuss the need for virtual function and how it works in C++.