

G-1/171/22

Roll No.

I Semester Examination, January 2022

M.Sc.

INFORMATION TECHNOLOGY

Paper I

(Object Oriented Programming with C++)

Time : 3 Hours]

[Max. Marks : 100

Note : *All questions are compulsory. Question Paper comprises of 3 Sections. Section A is objective type/multiple choice questions with no internal choice. Section B is short answer type with internal choice. Section C is long answer type with internal choice.*

SECTION A

1×10=10

(Objective Type/Multiple Choice Questions)

Choose the correct answer :

1. Which of the following is the correct syntax of including a user defined header files in C++ ?
(a) #include [userdefined]
(b) #include "userdefined"
(c) #include <userdefined.h>
(d) #include <userdefined>

P.T.O.

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2. Which of the following correctly declares an array in C++ ?
(a) array {10}; (b) array array [10];
(c) int array; (d) int array [10];
3. The default standard input device for C++ program is :
(a) Mouse (b) Scanner
(c) Keyboard (d) None of these
4. 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
5. What will be the output of the following C++ code ?
#include <iostream.h>
void man()
{
 int array [] = {10, 20, 30};
 cout << -2[array];
}
(a) 20 (b) -30
(c) -10 (d) 30

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6. Which of the following function declaration using default arguments is correct ?
- (a) `int f1(int x, int y = 5, int z = 10)`
 - (b) `int f1(int x = 5, int y = 10, int z)`
 - (c) `int f1(int x = 5, int y, int z = 10)`
 - (d) All are correct
7. The function whose prototype is `void getData(Item*thing)`, receives :
- (a) a pointer to a structure
 - (b) a reference to a structure
 - (c) a copy of a structure
 - (d) nothing
8. The operator that cannot be overloaded is :
- (a) ++ (b) ::
 - (c) () (d) ~
9. This pointer :
- (a) implicitly points to an object
 - (b) can be explicitly used in a class
 - (c) can be used to return an object
 - (d) All of the above

10. Unformatted input functions are handled by :
- (a) `ostream` class (b) `istream` class
 - (c) `istream` class (d) `bufstream` class

SECTION B**6×5=30****(Short Answer Type Questions)**

Note : Answer the following questions in **250** words.

Unit-I

1. Describe how Object Oriented System development is different from traditional procedure oriented software development.

Or

Discuss reference variable with suitable example.

Unit-II

2. Explain default argument with example.

Or

What is `goto` statement ? Write C++ program to find the greatest number of three using `goto` statement.

Unit-III

3. Write a C++ program to initialize base class members through a derived class constructor.

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Or

What is the ambiguity that arises in multiple inheritance ? How can it be overcome ? Explain with example.

Unit-IV

4. Discuss usage and advantages of pointers in C++ with example.

Or

How virtual function differ from pure virtual function ? Explain with example.

Unit-V

5. Write a C++ program to copy contents of one file to another.

Or

Explain the process of open, read, write and close files.

SECTION C

12×5=60

(Long Answer Type Questions)

Note : Answer the following questions in **500** words.

Unit-I

1. Describe C++ data type in detail.

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[6]

Or

Write a C++ program to read data on an employee and compute the net salary of each employee
DA = 60% of basic and income tax = 30% of the gross salary.

Unit-II

2. Discuss nesting of structure with the help of a suitable example.

Or

Explain briefly about function overloading with a suitable example.

Unit-III

3. How inheritance is basic features of OOP ?
Explain with program which has base class Shape and its derived class Rectangle.

Or

Briefly discuss with suitable example how member function can define inside the class and outside the class ?

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Unit-IV

4. Explain the concept of operator overloading with regards to overloading of “<<” operator.

Or

Explain friend function and its characteristics. Define a class matrix with an integer array of 3×3 of a data member. Define a friend function which adds two matrix objects and returns resultant matrix object.

Unit-V

5. Explain about Formatted and Unformatted IO with suitable example.

Or

What is Manipulator ? Discuss differences between manipulators and IOS function with suitable example.

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