

**Professional Course (Even) Examination, 2025**

( 4th Semester )

**BACHELOR OF COMPUTER APPLICATIONS**

**( Object-Oriented Programming in C++ )**

*Full Marks : 75*

*Time : 3 hours*

*The figures in the margin indicate full marks for the questions*

**( PART : A—OBJECTIVE )**

( Marks : 25 )

**SECTION—I**

( Marks : 15 )

I. Tick (✓) the correct answer in the brackets provided : 1×10=10

1. What is C++?

- (a) C++ is an object-oriented programming language (    )
- (b) C++ is a procedural programming language (    )
- (c) C++ supports both procedural and object-oriented programming language (    )
- (d) C++ is a functional programming language (    )

2. 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>` ( )

3. Which of the following is **not** a type of constructor in C++?

- (a) Default constructor ( )
- (b) Parameterized constructor ( )
- (c) Copy constructor ( )
- (d) Friend constructor ( )

4. Which of the following is a correct identifier in C++?

- (a) `VAR_1234` ( )
- (b) `$var_name` ( )
- (c) `7VARNAME` ( )
- (d) `7var_name` ( )

5. How many destructors can a class have in C++?

- (a) As many as the programmer wants ( )
- (b) As many as the constructor ( )
- (c) Only one ( )
- (d) Two : one for base class and one for derived class ( )

6. Which of the following is used for comments in C++?

- (a) `/*comment*/` ( )
- (b) `//comment*/` ( )
- (c) `//comment` ( )
- (d) Both `//comment` and `/*comment*/` ( )

7. Which of the following correctly declares an array in C++?

- (a) `array{10};` ( )
- (b) `array array[10];` ( )
- (c) `int array;` ( )
- (d) `int array[10];` ( )

8. Which keyword is used to define the macros in C++?

(a) #macro ( )

(b) #define ( )

(c) macro ( )

(d) define ( )

9. What is inheritance in C++?

(a) Deriving new classes from existing classes ( )

(b) Overloading of classes ( )

(c) Classes with same names ( )

(d) Wrapping of data into a single class ( )

10. Which concept allows you to reuse the written code in C++?

(a) Inheritance ( )

(b) Polymorphism ( )

(c) Abstraction ( )

(d) Encapsulation ( )

II. Indicate whether the following statements are *True (T)* or *False (F)* by putting a Tick (✓) mark in the brackets provided : 1×5=5

1. All C++ programs must have a function named main.

( T / F )

2. Object-oriented approach cannot be used to create database.

( T / F )

3. Polymorphism is extensively used in implementing inheritance.

( T / F )

4. A program that compiles will output the results that you intend it to.

( T / F )

5. A program that does not compile can be executed.

( T / F )

**SECTION—II**

( Marks : 10 )

**III.** Answer the following questions in short :

2×5=10

1. (a) Define inheritance with example.

**OR**

- (b) Define encapsulation with example.

2. (a) How do you return objects from function?

**OR**

- (b) What is an abstract class?

3. (a) What is copy constructor?

**OR**

- (b) What is the purpose of destructor?

4. (a) What is a friend function?

**OR**

- (b) What is virtual function?

5. (a) What is random file processing?

**OR**

- (b) What is the use of file stream?

( PART : B—DESCRIPTIVE )

( Marks : 50 )

IV. Answer the following questions :

10×5=50

1. (a) What are the basic concepts of OOP? 6
- (b) Write down the rules in naming an identifier. 4

**OR**

- (c) Differentiate between procedural programming and object-oriented programming. 6
  - (d) What are the features of object-oriented programming? 4
2. (a) Write a program to demonstrate pass-by-values and pass-by-reference. 6
  - (b) Explain virtual function with example. 4

**OR**

- (c) Explain the Access Specifiers in C++ and also give suitable examples. 5
  - (d) Define function. Explain the function overloading with a suitable example. 5
3. (a) Differentiate between classes and objects. 4
  - (b) What is a constructor? Write a C++ program to illustrate the use default constructor, parameterized constructor and copy constructor. 6

**OR**

- (c) What is Unary Operator overloading? Write a C++ program to implement it. 5
- (d) Write down the rules for overloading operators. 5



4. (a) Explain new and delete operators using an example. 6  
 (b) What are the different forms of inheritance supported by C++? Explain with examples. 4

**OR**

- (c) Define pointers. Explain pointers to pointers with a suitable example. 6  
 (d) Explain the different forms of polymorphism in C++ with the help of example. 4
5. (a) Describe the major categories of a container. 4  
 (b) What is a template? Write a template for adding two numbers of different data types. 6

**OR**

- (c) What is exception handling? Explain the try...catch statement in C++. 2+3=5  
 (d) What are command line arguments in a file? Write a program to explain how to read the text and to display its contents on the screen. 5

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