

**BACHELOR OF COMPUTER APPLICATION**  
**Third Semester**  
**OBJECT ORIENTED PROGRAMMING WITH C++**  
**(BCA - 11)**

**Duration: 3Hrs.**

**Full Marks: 70**

Part-A (Objective) =20  
Part-B (Descriptive) =50

**(PART-B: Descriptive)**

**Duration: 2 hrs. 40 mins.**

**Marks: 50**

**Answer any five of the following questions:**

1. What is object oriented programming? How is it different from the procedure oriented programming? What are the unique advantages of an object oriented programming paradigm? (2+3+5=10)
2. What is constructor? Write some characteristics of constructors. Define a class rectangle with appropriate data members. Write member functions for calculating area of the rectangle. (use constructor to initialize data members) (2+3+5=10)
3. What is inheritance and what are its different types? Explain multiple inheritance with example. (5+5=10)
4. What is operator overloading? Write a program to add two distances using operator overloading. (3+7=10)
5. What is method overloading and method overriding? Differentiate them with example. (5+5=10)
6. What do you mean by polymorphism and what are its different types? Explain each type with example. (2+8=10)

7. What do you mean by pure virtual function? Explain with an example. (2+8=10)

8. What is the main advantage of passing arguments by reference? Explain this with an example. (5+5=10)

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**BACHELOR OF COMPUTER APPLICATION**  
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**Duration: 20 minutes**

**Marks – 20**

**(PART A- Objective Type)**

**I. State whether true or false:**

**1×6=6**

- a. A class can serve as base class for many derived classes.
- b. The constructor should have only one or zero arguments.
- c. A class may have two default constructors.
- d. Protected variables are only accessible to the class.
- e. :: operator can't be overloaded.
- f. Friend functions are also member function of that class.

**II. Fill in the blanks:**

**1×6=6**

- a. cout is a/an \_\_\_\_\_.
- b. \_\_\_\_\_ is a special function that is called whenever a new object is created and initialized with data of another object.
- c. Parameter of a copy constructor should be a/an \_\_\_\_\_.
- d. \_\_\_\_\_ functions implement polymorphism.
- e. Combining code and data in a single unit is called \_\_\_\_\_.
- f. Object is an instance of \_\_\_\_\_.

**III. Choose the correct answer:**

**1×8=8**

- a. In order that the object can use the member function or data member, \_\_\_\_\_ operator is used
  - a. ::( scope resolution)
  - b. .(dot)
  - c. :(colon)
  - d. none
- b. Which of the following functions are performed by a constructor?
  - a. Construct a new class
  - b. Construct a new object
  - c. Construct a new function
  - d. Initialize objects

- c. When a class serves as base class for many derived classes, the situation is called:
- a. Polymorphism
  - b. Hierarchical inheritance
  - c. Hybrid inheritance
  - d. Multipath inheritance
- d. If a class C is derived from class B, which is derived from class A, all through public inheritance, then a class C member function can access
- a. Protected and public data only in C and B.
  - b. Protected and public data only in C.
  - c. Private data in A and B.
  - d. Protected data in A and B.
- e. Which of the following is not an OOP feature in C++?
- a. Encapsulation
  - b. Abstraction
  - c. Polymorphism
  - d. Exceptions
- f. By default members of a C++ class are
- a. Public
  - b. Protected
  - c. Private
  - d. None of the above
- g. The term \_\_\_\_\_ means the ability to take many forms.
- a. Inheritance
  - b. Polymorphism
  - c. Member function
  - d. Encapsulation
- h. Correct syntax of destructor in c++ is
- a. !Classname( )
  - b. @Classname( )
  - c. \$Classname( )
  - d. ~Classname( )

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