

(PART-B : Descriptive)

Time : 2 hrs. 40 min.

Marks : 50

[Answer question no.1 & any four (4) from the rest]

1. Explain the effect of inheritance on the visibility of members with suitable diagram. 10
2. What is a class? How does it accomplish data hiding? What are nested member functions? Explain with the help of an example. 2+4+4
=10
3. Explain the significance of a constructor. Is it mandatory to define a constructor for every class? Explain the concept of overloaded constructors with the help of an example. 3+2+5
=10
4. What is operator overloading? List the operators that cannot be overloaded. What do you understand by Type conversion? Explain the characteristics of Static data members and Static member functions 2+2+2+4
=10
5. What is Inheritance? Explain the different form of Inheritance. Define a class Student with data members as rollno and name. Derive a class Fees from Student that has a data member fees and functions to submit fees and generate receipt. Derive another class Result from Student that displays the marks and grade obtained by the student. 2+4+4
=10
6. Define friend function. Explain the characteristics of friend function. What is dynamic memory allocation? Explain how memory is allocated and release using dynamic memory allocation with proper syntax of each. 2+3+2+3
=10
7. Explain the advantages of new and delete operator over malloc() and free. What is the *this* pointer? Write a program demonstrating the use of the *this* pointer. 4+2+4
=10
8. How is polymorphism achieved at compile time and run time? Differentiate between virtual functions and pure virtual functions with a suitable example. 5+5=10

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**BACHELOR of COMPUTER APPLICATION
THIRD SEMESTER
OBJECT ORIENTED PROGRAMMING WITH C++
BCA – 301**

(Use separate answer scripts for Objective & Descriptive)

Duration : 3 hrs.

Full Marks : 70

(PART-A : Objective)

Time : 20 min.

Marks : 20

Choose the correct answer from the following:

1×20=20

1. Which concept of object oriented programming does a class support?
 - a. Data encapsulation
 - b. Data hiding
 - c. Data abstraction
 - d. All of these
2. What is default visibility mode for members of class in C++?
 - a. Public
 - b. Private
 - c. Protected
 - d. None of the above
3. How we can define member function outside the class?
 - a. Using union
 - b. Using colon (:) symbol
 - c. Using pointer
 - d. Using scope resolution
4. What is true about constructor?
 - a. Its name plural of class name
 - b. Its name has * symbol before it
 - c. Its name is same as class name
 - d. Its name has :: symbol before it
5. What is actual syntax of destructor in C++?
 - a. !classname()
 - b. @classname()
 - c. ~classname()
 - d. ::classname()
6. The major goal of inheritance in C++ is
 - a. To help modular programming
 - b. To facilitate the reusability of code
 - c. To facilitate the conversion of data types
 - d. To hide the data and function from outside class
7. The process of deriving a class from another derived class is known as
 - a. Single inheritance
 - b. Multiple inheritance
 - c. Hierarchical inheritance
 - d. Multilevel inheritance
8. In C++ operator, << operator is called as
 - a. An insertion operator or put to operator
 - b. An extraction operator or get to operator
 - c. An insertion operator or get from operator
 - d. Both a and c

9. Use of virtual function implies
- Overloading
 - Overriding
 - Static binding
 - Dynamic binding
10. Which operator cannot be overloaded?
- Binary operator
 - Unary operator
 - Ternary operator
 - All can be overloaded
11. Which of the following is not a type constructor?
- Copy constructor
 - Friend constructor
 - Default constructor
 - Parameterized constructor
12. Which of the following operator is overloaded for object cout?
- <<
 - >>
 - +
 - =
13. Which of the following concepts is used to implement late binding?
- Static function
 - Operator function
 - Const function
 - Virtual function
14. Which of the following ways are legal to access a class data member using this pointer?
- this → x
 - this.x
 - *this.x
 - *this → x
15. Which of the following operator cannot be overloaded?
- []
 -
 - ?:
 - *
16. Which inheritance type is used in the class below?
- ```
class A : public x, public y
{ }
```
- Single inheritance
  - Multilevel inheritance
  - Multiple inheritance
  - Hierarchical inheritance
17. Which of the following statement is correct?
- Class is an instance of object
  - Class is an instance of data type
  - Object is an instance of data type
  - Object is an instance of class
18. Constructors are called when
- A method is declared
  - A class is declared
  - An object is declared
  - None of the above
19. When using \_\_\_\_, overloaded through a member function, the left hand operands must be an object of the relevant class
- Binary operator
  - Unary operator
  - Function operator
  - Arithmetic operator
20. Ambiguity problems occur in which type of inheritance?
- Multilevel
  - Multiple
  - Multipath
  - Hierarchical