

**BACHELOR OF COMPUTER APPLICATION  
THIRD SEMESTER  
OBJECT ORIENTED PROGRAMMING WITH C++  
BCA-301**

**SET  
B**

[USE OMR SHEET FOR OBJECTIVE PART]

Duration: 3 hrs.

Full Marks: 70

Time: 30 min.

( Objective )

Marks: 20

Choose the correct answer from the following:

1×20=20

- Important advantages of using New and Delete operator in C++ is
  - Allocation of memory
  - Frees the memory previously allocated
  - Initialization of memory easily
  - Allocation of memory and frees the memory previously allocated
- C is derived from class B, which is derived from class A, all through public inheritance, then a class C member function can access
  - Protected and public data only in C and B
  - protected and public data only in C
  - private data in A and B.
  - protected data in A and B
- Which is the pointer which denotes the object calling the member function?
  - Variable pointer
  - This Pointer
  - Null Pointer
  - Zero Pointer
- A copy constructor is invoked when
  - A function returns a value
  - An argument is passed by value
  - A function returns by reference
  - None of these
- Which of the statements are true?
  - Function overloading is done at compile time.
  - Protected members are accessible to the member of derived class
  - A derived class inherits constructor and destructors.
  - A friend function can be called like normal function.
  - I, II, III
  - II, III, IV
  - I, III, IV
  - I, II, IV
- The programming language that has the ability to create new data types is called\_\_\_\_.
  - Overloaded
  - Encapsulated
  - Reprehensible
  - Extensible
- What are the advantages of passing arguments by reference?
  - Changes to parameter values within the function also affect the original arguments
  - There is need to copy parameter values (i.e. less memory used)
  - There is no need to call constructors for parameters (i.e. faster)
  - All of the mentioned

8. Enumeration is a process
- Declaring a set numbers
  - Sorting a list of strings
  - Assigning a list of legal values possible for a variable
  - Sequencing a list of operators
9. A \_\_\_\_\_ is special method used to initialize the instance variable of a class.
- Member function
  - Destructor
  - Constructor
  - Virtual function
10. Output of the following will be  
for (x=1, y=5; x+y<=10; x++)  
{cout<< x<<y;y++;}
- 1 5  
2 6  
3 7
  - 1 5  
2 6  
3 7  
4 8
  - 1 5  
1 6  
1 7  
1 8  
1 9
  - 2 5  
3 5  
4 5  
5 5
11. C++ actually supports following two complete dynamic allocation systems?
- One is defined by C++ and other not defined by
  - One defined by C and one specific to C++
  - Both are specific to C++
  - Both of them are improvement of C.
12. Runtime polymorphism can be achieved by
- Accessing virtual function through the pointer of base class
  - Accessing the virtual function through the object
  - The derived class
  - None of these
13. The friend function are used in situation where
- We want to have access to unrelated class
  - Dynamic binding is required
  - Exchange of data between classes to take place
  - None of these
14. What is the role of a constructor in classes?
- To modify the data whenever required
  - To destroy an object
  - To initialize the data members of an object when it is created
  - To call private functions from the outer world
15. If a data item is declared as a protected access specifier then it can be accessed
- Anywhere in the program
  - By the base and derived classes
  - Only by the base class
  - Only by the derived class
16. The programming languages C and C++ are not strongly typed languages because:
- C and C++ allows functions for which parameters are not type checked
  - C and C++ allows functions for which parameters are type checked
  - C and C++ allows functions for which parameters are not type checked and
  - Union types in these languages are not type checked.

also the union types in these languages are not type checked.

17. Pick the incorrect statements out of the following
- a. Operator overloading does not disturb the precedence of operators
  - b. Arity of operators can be changed using operator overloading
  - c. No new operators can be created
  - d. All of the mentioned
18.  $y$ 's of integer type then the expressions  $3 * (y - 8) / 9$  and  $(y - 8) / 9 * 3$
- a. must yield the same value
  - b. must yield different values.
  - c. may or may not yield the same value
  - d. none of the above
19. What is the use of this pointer?
- a. When local variable name is same as member's name, we can access member using this pointer
  - b. To return reference to the calling object
  - c. Can be used for chained function calls on an object
  - d. All of these
20. if the variable count exceeds 100, a single statement that prints "Too many" is
- a. `if (count < 100) cout << "Too many";`
  - b. `if (count >= 100) cout << "Too many";`
  - c. `if (count > 100) cout << "Too many";`
  - d. None of these

**( Descriptive )**

Time : 2hrs 30mins

Marks : 50

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

1. What is constructor and Destructor in C++ programming ? Define virtual base class and virtual function 10
  
2. Explain the advantages of pointer use in programming. Write about new and delete operator. Explain this- pointer with example 3+3+4=10
  
3. Consider a class 'Myclass' having constructors which allow definitions of objects in the following form: 10  
Myclass c1;  
Myclass c2="MNOP";  
Myclass c3=name;  
Write a program to model Myclass and manipulates its objects. Count the total no. of objects And please remember that computer have less memory space.
  
4. What is abstract class? Write a program having 'Vehicle' as an abstract base class and create derived classes such as Bus, Truck, LMV etc. from the student class. Create their objects and process them. 2+8=10
  
5. What is function over Loading? What are the advantages and disadvantages of it? Write a program to define use of friend unary operator overloading. 2+3+5=10
  
6. Mr X is a business man. He started his business with stationary items. Gradually he expand his business with grocery items and cloths. As programmer how can you represent his business model. What are features helps you to represent his model. 10
  
7. Design classes such that they supports the following statements: 10  
Rupees R1, R2;     Doller D1, D2;  
D1=R1;  
R2=D2;  
Write a complete program which does such conversions according to world market value.
  
8. a. Admission process of an educational institution is currently going on. Write a C++ program to count no. of students after admission of every student with a features of Object Oriented Programming. 7+3=10

b. Why is the friend function not allowed to access members of a class directly although its body can appear within the class body?

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