REV-01
BCA/53/58

2023/12

SET A

BACHELOR OF COMPUTER APPLICATION
THIRD SEMESTER
OBJECT ORIENTED PROGRAMMING
BCA-302
[USE OMR SHEET FOR OBJECTIVE PART]

Duration: 3 hrs. Full Marks: 70

Objective

Time: 30 mins. Marks: 20

Choose the correct answer from the following: *1×20=20*

1. Which of the following is the correct identifier?
   a. $var_name
   b. VAR_123
   c. varname@
   d. None of the above

2. The programming language that has the ability to create new data types is called.....
   a. Overloaded
   b. Encapsulated
   c. Reprehensible
   d. Extensible

3. Which of the following features is required to be supported by the programming language to become a pure object-oriented programming language?
   a. Encapsulation
   b. Inheritance
   c. Polymorphism
   d. All of the above

4. What is the output of the given program?

```
#include < stdio.h >
using namespace std;
int main()
{
int array[] = {10, 20, 30};
cout << -2[array];
return 0;
}
```

   a. -15
   b. -30
   c. Compiler error
   d. Garbage value

5.
```
int a=5, b=6, c, d;
c=a,b;
d=(a,b);
cout<<c<<d;
return 0;
```
   a. 5 6
   b. 6 5
   c. 6 7
   d. 6 8

6. Which of the following statement is correct about Virtual Inheritance?
   a. It is a technique to ensure that a private member of a base class can be accessed
   b. It is a technique to optimize the multiple inheritances

c. It is a technique to avoid the multiple inheritances of the classes

d. It is a C++ technique to avoid multiple copies of the base class into the derived or child classes

7. Consider the following given program and choose the most appropriate output from the given options:

```
#include <iostream>
using namespace std;
class A{
public:
  A(){
    cout<<"Constructor called\n";
    }
  ~A(){
    cout<<"Destructor called\n";
}
    };
int main(int argc, char const *argv[])
 {
 A *a = new A[5];
 delete[] a;
  return 0;
 }
```

a. Segmentation failure

b. Error

c. The Constructor will be invoked five times, and after that destructor will be invoked only once

d. The Constructor will be invoked five times, and after that destructor will also be invoked five times

8. Which of the following can be considered as the correct syntax for declaring an array of pointers of integers that has a size of 10 in C++?

a. int arr = new int[10];

b. int *arr = new int*[10]

c. int **arr = new int*[10];

d. int *arr = new int[10];

9. Which of the following can be considered as the members that can be inherited but not accessible in any class?

a. Public

b. Protected

c. Private

d. Both a and c

10. Which of the following can be used to create an abstract class in the C++ programming language?

a. By using the pure virtual function in the class

b. By declaring a virtual function in the base class

c. By declaring the virtual keyword afterward, the class Declaration

d. None of the above

11. Which of the following statements is correct about the friend function in C++ programming language?

a. A friend function is able to access private members of a class

b. A friend function can access the private members of a class

c. A friend function is able to access the public members of a class
d. All of the above

12. Which one of the following cannot be used with the virtual keyword?
a. Constructor
b. Destructor
c. Member function
d. None of the above

13. Which of the following is not a kind of inheritance?
a. Distributed
b. Multiple
c. Multi-level
d. Hierarchal

14. Which of the following concept refers to adding new components to the program at the run time?
a. Dynamic Loading
b. Dynamic binding
c. Data hiding
d. Both a & b

15. Which of the following offers a programmer the facility of using a specific class object into other classes?
a. Polymorphism
b. Abstraction
c. Inheritance
d. Composition

16. Which of the following refers to the wrapping of data and its functionality into a single individual entity?
a. Modularity
b. Abstraction
c. Encapsulation
d. None of the above

17. Which of the following options correctly explains the concept of Polymorphism?
a. int func(float);
float func(int, int, char);
b. int func(int);
int func(int);
c. int func(int, int);
float func1(float, float);
d. None of the above

18. What will be the output of the following, C++ code?

```
#include<iostream>
using namespace std;
int main()
{
  int a =5;
  auto check =[](int x)
  {
     if(x ==0)
       return false;
     else
return true;
};
cout<<check(a)<<end;
 return 0;
 }
```

a. 0
b. Segmentation fault
c. Error
d. 1

19. Which of the following concept is used by pre-increment?
a. Call by value
b. Call by reference
c. Queue
d. Call by name

20. Why inline functions are useful?
a. Functions are large and contain several nested loops
b. Usually, it is small, and we want to avoid the function calls
c. The function has several static variables
d. All of the above

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(Descriptive)

Time : 2 hr. 30 mins. **Marks : 50**

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

1. What is virtual function? Write down the utility of virtual functions. What is pure virtual function? 10

2. a) What is Virtual base class? Why it is used in inheritance? Give example. 5+5=10
   b) Write down the roles of protected data member in inheritance.

3. a) Write a programme to access member function of an objects using pointer. 5+5=10
   b) What is this pointer? Write down the application of this pointer.

4. a) Give a brief comparison between the overloading with Friend function and member function. 5+5=10
   b) Explain Function overloading. What are the roles of default parameter? Give example.

5. a) Explain those operators and keywords that are supported in C++ only. 5+5=10
   b) What is polymorphism? How can you achieve polymorphism? Give example.

6. What are constructors? Why they are used in programme? How Constructors are different from Destructors? 10

7. a) What is Hybrid inheritance? How it is different from Hierarchical inheritance? Explain with suitable example. 5+5=10
   b) A friend function cannot be used to overload the assignment operator '+'. Explain why?

8. Write short notes on: (*any two*) 5+5=10
   a) Copy constructor
   b) Static Variable
   c) Dynamic Binding

= = *** = =