SET B

BACHELOR OF COMPUTER APPLICATION
THIRD SEMESTER
OBJECT ORIENTED PROGRAMMING
BCA-302

[USE OMR FOR OBJECTIVE PART]

Duration: 3 hrs. **Full Marks: 70**

Objective

Time: 30 min. **Marks: 20**

Choose the correct answer from the following: *1X20=20*

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

2. A base class constructor is invoke, when _____
   a. Object of derive class created
   b. Object of base class created
   c. To be called by derive constructor
   d. Do not invoked

3. Dynamic polymorphism is achieve with_____
   a. Pointer to Base object
   b. Pointer to Derive object
   c. This pointer
   d. Using dynamic constructor

4. A static data member can be called using _____
   a. A static function only
   b. The class name where it belongs
   c. Object of that class only
   d. All of the above

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

6. Which of the following is called line feed operator in C++?
   a. delete
   b. endl
   c. new
   d. setw

7. 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

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. A protected member of base class when inherited privately become_____ in derive class

a. Public

b. Protected

c. Private

d. Do not inherited

10. The programming language that has the ability to create new data types is called_____.

a. Overloaded

b. Encapsulated

c. Reprehensible

d. Extensible

11. Which of the following is the output of the given statements?

cout.fill('*'); cout.width(10); cout<<5250;

a. ******5250

b. **********5250

c. 5250******

d. 5250**********

12. 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

13 Default arguments in C++ are assigned the value from the list of arguments in the function call statements as_____

a. Left to right

b. Right to left

c. Where value is found

d. Maximum to minimum

14. What is the output of the given program?

```
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

15. In which of the following situation(s) inline functions may not work properly?

i) Function contain static variable
ii) If the function is recursive
iii) Return a value with a loop or switch

a. i) only
b. ii) only
c. i) & ii)
d. i), ii) & iii)

16. 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

17. Which one of the following cannot be used with the virtual keyword?

a. Constructor
b. Destructor
c. Member function
d. None of the above

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

```
using namespace std;
class A{
public:
  A(){
    cout<<"Constructor called\n";
    }
  ~A(){
    cout<<"Destructor called\n";
}
    };
  int main()
```

```
{
A *a = new A[5];
delete[] a;
 return 0;
}
```

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

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

19. 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

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

```
cout. precision(2);
cout. width(5);
cout<<1.2345;
```

a. 123.45
b. 12.345
c. 12345
d. 1.23

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(Descriptive)

Time : 2 hrs. 40 min. **Marks : 50**

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

1. What is inheritance? What are the different types of inheritance available? Explain with block diagram. **10**

2. (a) Write down the roles of protected data member in inheritance? **5+5=10**
   (b) Explain the roles of scope resolution operator with examples.

3. (a) Explain the hierarchy of **ios** class in OOPs. **5+5=10**
   (b) What are the applications of abstract classes?

4. (a) Give a brief comparison between the overloading with Friend function and member function. **5+5=10**

   (b) Write a C++ program to convert an integer value to an time object.

5. (a) Write a C++ program to multiply two complex numbers using overloaded '*' operator **5+5=10**
   (b) What is polymorphism? How can you achieve runtime polymorphism? Give example.

6. What are constructors? Why they are used in programming? How Constructors are different from Destructors? Give example. **10**

7. (a) Define Template. How do you classify template in C++? Explain with suitable example. **5+5=10**
   (b) What is Virtual base class? Why it is used in inheritance? Give example

8. Write short notes on: **(any two)** **5+5=10**
   a. Basic to Class Conversion
   b. Friend functions
   c. Manipulators

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