CODERS LODGE

OBJECT ORIENTED PROGRAMMING USING C++

OOPS CONCEPT(CL1.1C++)

Kindly read the instructions carefully

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1. **Predict the output of following C++ program.**

```
#include<iostream>
using namespace std;
class A
{
    public:
    virtual void fun() {cout << "A" << endl ;}
};
class B: public A
{
    public:
    virtual void fun() {cout << "B" << endl;}
};
class C: public B
{
    public:
    virtual void fun() {cout << "C" << endl;}
};

int main()
{
    A *a = new C;
    A *b = new B;
```

```
    a->fun();
    b->fun();
    return 0;
}
```

Output: C
B

2. Predict the output of following C++ program.

```
#include<iostream>
using namespace std;
class A
{
    public :
        int x=20;
};
class B
{
    public :
        int x=10;
};
int main()
{
    A obj1;
    B obj2;
```

```
    obj1 = obj2;
    cout<< obj1.x;
    cout<<endl;
    return 0;
}
```

Output: The program will not generate output due to compilation error.

3. **Predict the output of following C++ program.**

```
#include<iostream>
using namespace std;

int main()
{
    int *ptr = new int(5);
    cout << *ptr;
    return 0;
}
```

Output: 5

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

```
#include <iostream>
using namespace std;
int main()
{
   int a = 5, b = 6, c;
```

```
    c = (a > b) ? a : b;
    cout << c;
    return 0;
}
```

a) 6
b) 5
c) 4
d) 7

Answer: a

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

```
#include <iostream>
using namespace std;
int main()
{
    int n = 15;
    for ( ; ;)
    cout << n;
    return 0;
}
```

a) error
b) 15
c) infinite times of printing n
d) none of the mentioned

Answer: c

6. **Predict the output of following C++ program.**

```
#include<iostream>
using namespace std;
class Test
{
private:
    int x;
public:
    void setX (int x) { Test::x = x; }
    void print() { cout << "x = " << x << endl; }
};

int main()
{
    Test obj;
    int x = 40;
    obj.setX(x);
    obj.print();
    return 0;
}
```

Output: x=40

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

```
#include <iostream>
using namespace std;
int fun(int=0, int = 0);
int main()
{
  cout << fun(5);
  return 0;
}
int fun(int x, int y) { return (x+y); }
```

a) -5
b) 0
c) 10
d) 5

Answer: d

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

```
#include <iostream>
using namespace std;
int operate (int a, int b)
{
   return (a * b);
}
float operate (float a, float b)
```

```
{
    return (a / b);
}
int main()
{
    int x = 5, y = 2;
    float n = 5.0, m = 2.0;
    cout << operate(x, y) <<"\t";
    cout << operate (n, m);
    return 0;
}
```

a) 10.0 5.0
b) 5.0 2.5
c) 10.0 5
d) 10 2.5

Answer: d

9. **Predict the output of following C++ program**

```
#include <iostream>
using namespace std;
class A
{
    int id;
    static int count;
```

```
public:
    A()
    {
        count++;
        id = count;
        cout << "constructor called " << id << endl;
    }
    ~A()
    {
        cout << "destructor called " << id << endl;
    }
};
int A::count = 0;
int main()
{
    A a[2];
    return 0;
}
```

Output: constructor called 1

constructor called 2

destructor called 2

destructor called 1

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

```
#include <iostream>
using namespace std;
struct a
{
   int count;
};
struct b
{
   int* value;
};
struct c : public a, public b
{
};
int main()
{
   c* p = new c;
   p->value = 0;
   cout << "Inherited";
   return 0;
}
```

a) Inherited
b) Error

c) Runtime error
d) inherited

Answer: a

11. Predict the output of following C++ program.

```
#include <iostream>
using namespace std;
class A
{
public:
        void print() { cout << "A::print()"; }
};

class B : private A
{
public:
        void print() { cout << "B::print()"; }
};

class C : public B
{
public:
        void print() { A::print(); }
};
```

```
int main()
{
    C b;
    b.print();
}
```

Output: Compiler Error: 'A' is not an accessible base of 'C'

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

```
#include <iostream>
#include <string>
using namespace std;
class A
{
    int a, b;
    float d;
  public:
    void change(int i){
        a = i;
    }
    void value_of_a(){
        cout<<a;
    }
```

```
};


class B: private A
{


};
int main(int argc, char const *argv[])
{
    B b;
    cout<<sizeof(B);
    return 0;
}
```

a) 8
b) 12
c) Error
d) Segmentation fault

Answer: b

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

```
#include <iostream>
#include <string>
using namespace std;
class A{
    float d;
```

```
  public:
        virtual void func(){
              cout<<"Hello this is class A\n";
        }
};
class B: public A{
        int a = 15;
public:
        void func(){
              cout<<"Hello this is class B\n";
        }
};
int main(int argc, char const *argv[])
{
        B b;
        b.func();
        return 0;
}
```

a) Hello this is class B
b) Hello this is class A
c) Error
d) Segmentation fault

Answer: a

14. Predict the output of following C++ program.

```
#include<iostream>
using namespace std;
class Base {
protected:
        int x;
public:
        Base (int i){ x = i;}
};

class Derived : public Base {
public:
        Derived (int i):Base(i) { }
        void print() { cout << x; }
};

int main()
{
        Derived d(10);
        d.print();
}
```

Output: 10

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

```
#include <iostream>
#include <string>
using namespace std;
class Mammal
{
  public:
        virtual void Define(){
                cout<<"I'm a Mammal\n";
        }
};

class Human: public Mammal
{
  private:
        void Define(){
                cout<<"I'm a Human\n";
        }
};

int main(int argc, char const *argv[])
{
```

```
        Mammal *M = new Mammal();
        Human H;
        M = &H;
        M->Define();
        return 0;
}
```

a) Error
b) Segmnetation fault
c) I'm a Human
d) Garbage Value

Answer: c

16. Predict the output of following C++ program.

```
#include <iostream>
using std::cout;
class Test
{
public:
        Test();
        ~Test();
};
Test::Test()
{
        cout << "Constructor is executed\n";
```

```
}
Test::~Test()
{
        cout << "Destructor is executed\n";
}
int main()
{
        delete new Test();
        return 0;
}
```

Output: Constructor is executed

Destructor is executed

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

```
#include <iostream>
#include <string>
using namespace std;
class A
{
        int a;
  public:
        A(){
                a = 0;
        }
```

```
        void show(){
            a++;
            cout<<"a: "<<a<<endl;
        }
};

class B: public A
{
  public:
};

int main(int argc, char const *argv[])
{
        B b;
        b.show();
        return 0;
}
```

a) a: 1
b) a: 0
c) Error
d) Segmentation fault

Answer: a

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

```
#include <iostream>
#include <string>
#include <cstdlib>
using namespace std;

void func(int a, int b)
{

    if(b == 0){
    throw "This value of b will make the product  zero. "
            "So please provide positive values.\n";
    }
    else{
        cout<<"Product of "<<a<<" and  "<<b<<" is:
"<<a*b<<endl;
    }
}

int main()
{
    try{
```

```
            func(5,0);
        }
        catch(const char* e){
            cout<<e;
        }
}
```

a) 0
b) 5
c) This value of b will make the product zero. So please provide positive values.
d) Product of 5 and 0 is: 0

Answer: c

19. What will be the output of this program?

```
#include <iostream>
using namespace std;
int a = 90;

int fun(int x, int *y = &a)
{
   *y = x + *y;
   return x + *y;
}
```

```
int main()
{
   int a = 5, b = 10;

   a = fun(a);
   cout << a << " " << b << endl;

   b = fun(::a,&a);
   cout << a << " " << b << endl;

   return 0;
}
```

Output: 100 10

195 290

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

```
#include <iostream>
#include <string>
#include <cstdlib>
using namespace std;
class A
{
        int a;
```

```
    public:
        A(){}
};

class B: public A
{
        int b;
    public:
        B(){}
};

void func()
{
        B b;
        throw b;
}

int main()
{
        try{
                func();
        }
        catch(A a){
```

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```
            cout<<"Caught A Class\n";
        }
        catch(B b){
            cout<<"Caught B Class\n";
        }
}
```

a) Caught B Class
b) Caught A Class
c) Compile-time error
d) Run-time error

Answer: b

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