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Register for Certification exam (https://examform.nptel.ac.in/2023_01/exam_form/dashboard)

Course outline

How does an NPTEL online course work? ()

Week 0 ()

Week 1 ()

Week 2 ()

Week 3 ()

Week 4 ()

Week 5 ()

Lecture 21 : Inheritance: Part 1 (Inheritance Semantics) (unit?unit=62&lesson=63)

Week 5 : Assignment 5

The due date for submitting this assignment has passed.

Due on 2023-03-01, 23:59 IST.

Assignment submitted on 2023-02-25, 11:57 IST

1) ***2 points***

Consider the following code segment.

```
#include <iostream>
using namespace std;
class Interest {
    protected:
        double i;
    public:
        Interest(double _i) : i(_i) {}
        void calculate() { cout << i << endl; }
};
class FDInterest : public Interest {
    public:
        FDInterest(double _i) : Interest(_i) {}
        void calculate(double prin) { cout << i * prin << endl; }
};
int main(){
    FDInterest i1(6.75);
    i1.calculate();    //LINE-1
    return 0;
}
```

What will be the output/error?

a) 6.75

b) 0

c) 675

d) Compilation error: no matching function for call to 'FDInterest::calculate()'

a)
b)
c)
d)

Yes, the answer is correct.
Score: 2

Accepted Answers:
d)

2) ***2 points***

Consider the following code segment.

```
#include <iostream>
using namespace std;
class C {
    public:
        void print() { cout << "C Programming" << endl; }
};
class CPP : public C {
    public:
        void print() { cout << "C++ Programming" << endl; }
};
int main(){
    C *a1 = new C();
    C *b1 = new CPP();
    a1->print();
    b1->print();
    return 0;
}
```

What will be the output?

a)
```
C Programming
C++ Programming
```

b)
```
C++ Programming
C Programming
```

c)
```
C Programming
C Programming
```

d)
```
C++ Programming
C++ Programming
```

a)
b)
c)
d)

Yes, the answer is correct.

(/noc23_cs50/progassignment?name=182)
W5_Programming_Qs-2 (/noc23_cs50/progassignment?name=183)
W5_Programming_Qs-3 (/noc23_cs50/progassignment?name=184)
Week 5 Feedback Form (unit?unit=62&lesson=70)
Assignment 5 Solution (unit?unit=62&lesson=71)
Week 6 ()
Week 7 ()
Week 8 ()
Download Videos ()
Books ()
Transcripts ()
Problem Solving Session ()

Score: 2

Accepted Answers:

c)

3) **2 points**

Consider the following code segment.

```
#include<iostream>
using namespace std;
class One{
    public:
        One() { cout<<"1 "; }
        ~One() { cout << "-1 "; }
};
class Two : public One {
    public:
        Two() { cout << "2 "; }
        ~Two() { cout << "-2 "; }
};
class Three : public One{
    Two b;
    public:
        Three() { cout << "3 "; }
        ~Three() { cout << "-3 "; }
};
int main(){
    Three t1;
    return 0;
}
```

What will be the output?

a) 1 2 3 -3 -2 -1

b) 1 1 2 3 -3 -1 -1

c) 1 3 -3 -1

d) 1 1 2 3 -3 -2 -1 -1

- a)
- b)
- c)
- d)

Yes, the answer is correct.
Score: 2

Accepted Answers:

d)

4) **2 points**

Consider the following code segment.

```
#include<iostream>
using namespace std;
class Base{
    public:
        void print() { cout << "Base" << endl; }
};
class Derived : protected Base {
    public:
        Derived() { ________________ } //LINE-1
};
int main(){
    Derived t1;
    return 0;
}
```

Fill in the blank at LINE-1 so that the program will print Base.

a) `Base::print();`

b) `Base.print();`

c) `(new Base)->print();`

d) `Base->print();`

- [x] a)
- [ ] b)
- [x] c)
- [ ] d)

Yes, the answer is correct.
Score: 2

Accepted Answers:
a)
c)

5) ***2 points***

Consider the following code segment.

```
#include <iostream>
using namespace std;
class B {
    protected:
        int X;
    public:
        B(int i = 0) : X(i) {}
};
class D : public B {
    B b;
    public:
        D(B b1, int i = 0) : B(i), b(b1) {}
        void print1() { cout << X << endl; }   // LINE-1
        void print2() { cout << b.X << endl; } // LINE-2
};
int main() {
    B b(5);
    D d(b, 10);
    d.print1();
    d.print2();
    return 0;
}
```

What will be the output/error?

a) 5 10

b) 0 10

c) Compilation error generated from LINE-1

d) Compilation error generated from LINE-2

- a)
- b)
- c)
- d)

Yes, the answer is correct.
Score: 2

Accepted Answers:
d)

6) ***2 points***

Consider the following code segment.

```
#include <iostream>
using namespace std;
class A{
    public:
        A(int i){ cout << "A::" << i << " "; }
        ~A(){ cout << "~A "; }
};
class B : public A{
    public:
        B(int i) : A(i){ cout << "B::" << i << " "; }
        ~B(){ cout << "~B "; }
};
class C : public B{
    public:
        C(int i) : B(i){ cout << "C::" << i << " "; }
        ~C(){ cout << "~C "; }
};
C *dp;
void caller(){
    dp = new C(1); //LINE-1
}
int main(){
    C d(2); //LINE-2
    {
        C d(3); //LINE-3
    }
    caller(); //LINE-4
    delete dp; //LINE-5
    return 0;
}
```

What will be the output?

a) `A::2 B::2 C::2 A::3 B::3 C::3 A::1 B::1 C::1 ~C ~B ~A ~C ~B ~A ~C ~B ~A`

b) `A::2 B::2 C::2 A::3 B::3 C::3 ~C ~B ~A A::1 B::1 C::1 ~C ~B ~A ~C ~B ~A`

c) `C::2 B::2 A::2 C::3 B::3 A::3 C::1 B::1 A::1 ~C ~B ~A ~A ~B ~A ~C ~B ~A`

d) `C::2 B::2 A::2 C::3 B::3 A::3 C::1 B::1 A::1 ~A ~B ~C ~A ~B ~C ~A ~B ~C`

- ○ a)
- ◉ b)
- ○ c)
- ○ d)

Yes, the answer is correct.
Score: 2

Accepted Answers:
b)

7) ***2 points***

Consider the following code segment.

```
#include<iostream>
using namespace std;
class Base {
    public:
        void f() { cout<< "Base::f()"; }
};
class Derived : public Base {
    public:
        void f() { cout<<"Derived::f()"; };
};
main() {
    Derived obj;
    ----------------; //LINE-1
    return 0;
}
```

Fill in the blank at LINE-1 so that the program will print Base::f().

a) Base.obj.f()

b) Base.obj::f()

c) obj.Base::f()

d) Base::obj.f()

- [ ] a)
- [ ] b)
- [x] c)
- [ ] d)

Yes, the answer is correct.
Score: 2

Accepted Answers:
c)

8) ***2 points***

Consider the following code segment.

```
#include<iostream>
using namespace std;
class Staff{
    string name;
    public:
        Staff(string _name = "unknown") : name(_name){}
        void print1(){ cout << name << " "; }
};
class Teacher : protected Staff{
    string deptName;
    public:
        Teacher(string _name, string _deptName) : Staff(_name), deptName(_deptName){}
        void print2(){ cout << deptName << " "; }
};
int main(){
    Teacher t("Partha", "CSE");
    t.print1();     //LINE-1
    t.print2();     //LINE-2
    return 0;
}
```

What will be the output/error?

a) `Partha CSE`

b) `unknown CSE`

c) `Compilation error at LINE-1: void 'Staff::print1()' is inaccessible in this context`

d) `Compilation error at LINE-2: void 'Staff::print2()' is inaccessible in this context`

- a)
- b)
- c)
- d)

Yes, the answer is correct.
Score: 2

Accepted Answers:
c)

9) ***2 points***

Consider the following code segment.

```
#include <iostream>
using namespace std;
class A1 {
    protected:
        int t1;
    public:
        A1(int _t1) : t1(_t1) { }
};
class A2 : public A1 {
    protected:
        int t2;
    public:
        A2(int _t1, int _t2) : A1(_t1), t2(_t2) { }
};
class A3 : private A2 {
    public:
        A3(int _t1, int _t2) : ____________ { }    //LINE-1
        void print() { cout << t1 << " " << t2; }
};
int main() {
    A3 d(10, 20);
    d.print();
    return 0;
}
```

Fill in the blank at LINE-1 such that the program will print 10 20.

a) A2(_t1, _t2)

b) A2(_t2, _t1)

c) A1(_t1), A2(_t2)

d) A2(_t1), A2(_t1, _t2)

- a)
- b)
- c)
- d)

Yes, the answer is correct.
Score: 2

Accepted Answers:
a)