Python

1. What is the output of the following Python code?

```
def func(x, y=[]):
    y.append(x)
    return y

print(func(1))
print(func(2))
print(func(3, []))
print(func(4))
```

a) [1]
[1, 2]
[3]
[1, 2, 4]

b) [1]
[1, 2]
[3]
[4]

c) [1]
[2]
[3]
[4]

d) [1]
[1, 2]
[3]
[1, 2, 3, 4]

2. What will be the output of the following Python code?

```
x = [1, 2, 3, 4]
y = x
x[1] = 10
print(y)
```

a) [1, 2, 3, 4]
b) [1, 10, 3, 4]
c) [10, 2, 3, 4]
d) [1, 2, 10, 4]

3. What is the output of the following Python code?

```
class A:
    def __init__(self):
        self.value = 5

class B(A):
    def __init__(self):
        super().__init__()
        self.value = 10

obj = B()
print(obj.value)
```

a) 5
b) 10
c) None
d) Error

4. What will be the output of the following Python code?

```
def outer():
    x = 5
    def inner():
        nonlocal x
        x = 10
    inner()
    return x

print(outer())
```

a) 5
b) 10
c) None
d) Error

5. What will be the output of the following Python code?

```
x = [1, 2, 3]
y = x[:]
x[0] = 10
print(y)
```

a) [1, 2, 3]
b) [10, 2, 3]
c) [1, 10, 3]
d) [10, 1, 2]