

1. Static Scoping:

Global a = 1

Global b = 2

A() --> local a = 3; local b = 4

B() --> prints (1, 2)

Global a = 5

Global b = 6

Print (3, 4)

Prints (5, 6)

Result: 1, 2, 3, 4, 5, 6

Dynamic Scoping:

Global a = 1

Global b = 2

A() --> local a = 3; local b = 4

B() --> print (3, 4)

Local a = 5

Local b = 6

Print (5, 6)

Print (1, 2)

Result: 3, 4, 5, 6, 1, 2

2. 3.6

a. 9, 4, 2, 3

b. Dynamic:

A(3):
R(3): [print 2]; x = 1; m = 3; g =
R(2): [print 4]; x = 2; m = 2; g =
R(1): [print 9]; x = 4 -> 2; m = 1; g =
B(3): x = 9 -> 4 -> 2; m = 3; g =
Main: g =

Static:

A(3):
R(3): [print 2]; x = 1; m = 3; g =
R(2): [print 4]; x = 2; m = 2; g =
R(1): [print 9]; x = 4 -> 2; m = 1; g =
B(3): x = 9 -> 4 -> 2; m = 3; g =
Main: g =

3. The minimum amount of space required for the variables is 24 bytes

4. Static:

```

set_x(0) ->    global x = 0
first()
    Set_x(1) ->    global x = 1
    Print 1
Print 1
second()
    X =
    set_x(2) ->    global x = 2
    Print 2
Print 2

```

Result: 1 1 2 2

Dynamic:

```

set_x(0) -> global x = 0
first()
    set_x(1) -> global x = 1
    Print 1
Print 1
second()
    Local x =
    set_x(2) -> local x = 2
    Print 2
Print 1

```

Result: 1 1 2 1

5. 3.19

- a. 3
- b. 1