ASSIGNMENT 22

ANSWER 1 :

- Result : `'iNeuron'`
- Explanation : X is defined as a global variable, which can be accessed inside or outside of the function.

ANSWER 2 :

- Result : `'iNeuron'`
- Explanation : X is defined as a global variable when created outside a function. The other X which is created inside the function has its scope within the function and it gets destroyed as soon as function ends.

ANSWER 3 :

- Result : `'NI'`
  `'iNeuron'`
- Explanation : `func()` is called first so print statement inside the function will execute first and since two functions with the same variable name are created, the one inside the function has priority in this case and then its scope will be destroyed and then the print statement below `func()` will get executed and X with global scope will be printed.

ANSWER 4 :

- Result : `'NI'`
- Explanation : keyword `global` before a variable name inside a function creates the scope of the variable as global. So, in this case func() is updating the value of X from `'iNeuron'` to `'NI'`.

QUESTION 5:

```
>>>X = 'iNeuron'
>>>def func():
        X = 'NI'
        def nested():
            print(X)
        nested()

>>>func()
>>>X
```

ANSWER 5 :

- Assuming above indentations.
- Result :`'NI'`
  `'iNeuron'`

- Explanation :
    a. As soon as `func()` is called, following sequence happened
        i. local variable X is created and `'NI'` is assigned to it
        ii. `nested()` is created, [parent = `func()`]
        iii. `nested()` is called
        iv. `'NI'` is printed
        v. the function returns None.
    b. X the global variable is printed.

QUESTION 6 : How about this code: what is its output in Python 3, and explain?

```
>>>def func():
        X = 'NI'
        def nested():
            nonlocal X
            X = 'Spam'
        nested()
        print(X)

>>>func()
```

ANSWER 6 :

- Assuming above indentations.
- Result :`'Spam'`
- Explanation : After `func()` is executed:
    1. Local variable `X = 'NI'` created.
    2. `nested()` is created. `[parent = func()]`
    3. `X` is declared as `nonlocal` variable,
    4. Value of `X` is updated to `'Spam'`,
    5. `'Spam'` is printed.
- Nonlocal variables are used in nested functions whose local scope is not defined. This means that the variable can be neither in the local nor the global scope.
- NOTE : If we change the value of a nonlocal variable, the changes appear in the local variable.