

CSE 470 - Quiz 03

Name:

ID:

Section:

Marks: 30

[N.B. Try to answer the following questions within 5 sentences.]

1. What is CFG? Explain the structure of CFG.

3

2. What external quality attribute of software does CFG and cyclomatic complexity represent? How can this be optimized (just mention increase or decrease and why)?

3

3. Draw the CFG and determine the cyclomatic complexity number for the following code:

```
numbers = [1, 2, 3, -4, 5, 6]
total = 0

for num in numbers:
    if num % 2 == 0:
        total += num
    else:
        total -= num

if total > 0:
    print("The result is positive:", total)
elif total < 0:
    print("The result is negative:", total)
else:
    print("The result is zero")
```

6

4. What is SIX? Define the equation and variables utilized.

3

5. What external quality attribute of software does SIX represent? How can this be optimized (just mention increase or decrease and why)?

3

6. Determine the SIX for the SmartTable class in the following code:

```
class ElectronicDevice:
    def power_on(self):
        print("Electronic Device is powered on.")
    def power_off(self):
        print("Electronic Device is powered off.")

class Furniture:
    def move(self):
        print("Furniture has been moved.")

class Lamp(ElectronicDevice):
    def turn_on(self):
        print("Lamp is turned on.")

class SmartTable(Furniture, Lamp):
    def power_off(self):
        print("SmartTable is powered off differently.")
    def activate(self):
        print("SmartTable activated.")
```

6