BRAC UNIVERSITY
Department of Computer Science and Engineering

Examination: Quiz 3
Semester: Fall 2024

Duration: 30 minutes
Full Marks: 15

CSE 470: Software Engineering

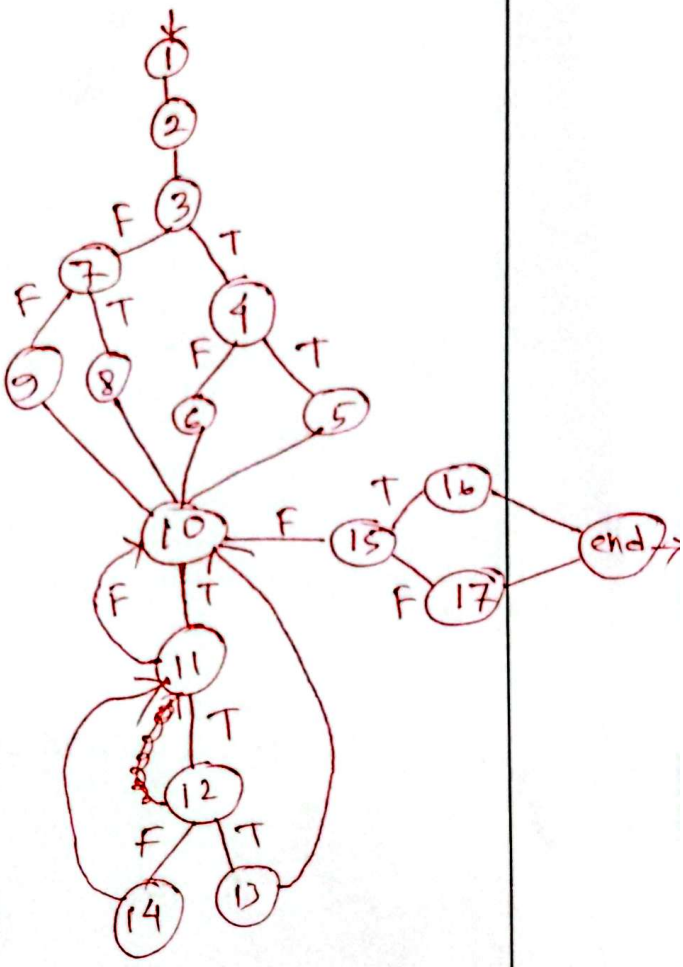
Name: **ID:** **Section:**

1. Write down the singleton class with a driver code. **[5] [CO3]**
2. Consider the program and draw the CFG of the following method. What should the cyclometric complexity of the code be using three formulae? Show the node identification in question. **[5+3] [CO4]**
3. Generate a test case using only one independent path. **[2] [CO4]**

```
def myFunction(): # do not count this as a node
    x = 10
    y = 20
    if x > 5:
        if y > 15:
            print("x and y are large")
        else:
            print("x is large, but y is not")
    else:
        if y > 15:
            print("y is large, but x is not")
        else:
            print("neither x nor y is large")

    for i in range(x):
        for j in range(y):
            if i + j > 15:
                print("sum is large")
                break
            else:
                print("sum is not large")
    if x > y:
        a = x
    else:
        a = y
```

```
if __name__ == "__main__": # do not count
this as node
    myFunction() # function call, consider
this as the starting node
```



24 - 18 + 2 = 8 (E-N+2P)
7 + 1 = 8 (R+1)
7 + 1 = 8 (P+1)

BRAC UNIVERSITY
Department of Computer Science and Engineering

Examination: Quiz 3 | Duration: 20 minutes
Semester: Fall 2024 | Full Marks: 15

CSE 470: Software Engineering

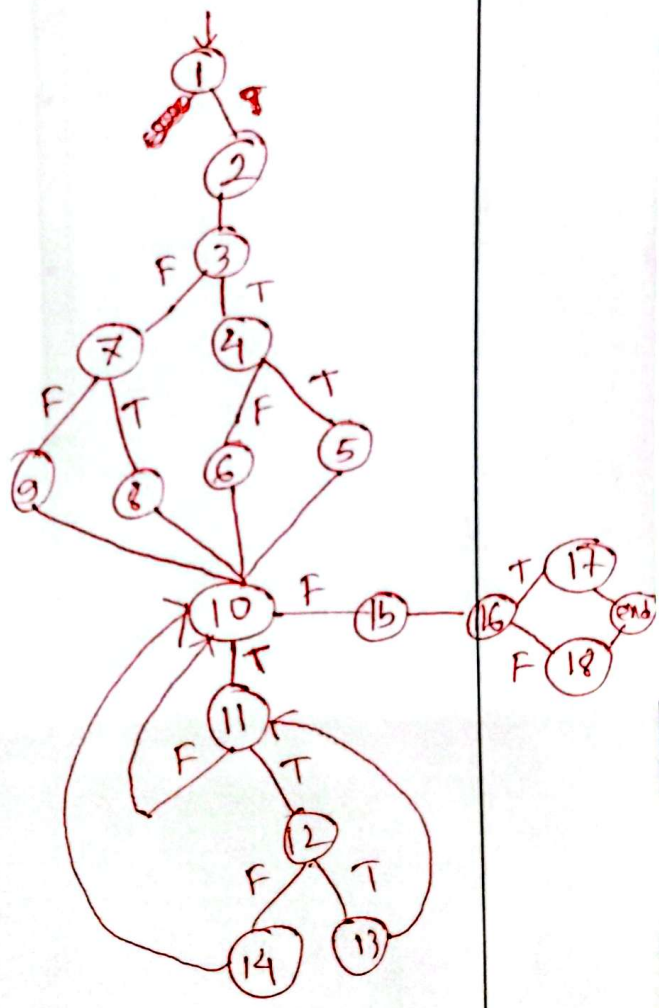
Name: **ID:** **Section:**

1. Write down the celebrity and fan class from the observer design pattern (without driver code). **[5] [CO3]**
2. Consider the program and draw the CFG of the following method. What should the cyclometric complexity of the code be using three formulae? Show the node identification in question. **[5+3] [CO4]**
3. Generate a test case using only one independent path. **[2] [CO4]**

```
def myFunction(): # do not count this as a node
    x = 10
    y = 20
    if x > 5:
        if y > 15:
            print("x and y are large")
        else:
            print("x is large, but y is not")
    else:
        if y > 15:
            print("y is large, but x is not")
        else:
            print("neither x nor y is large")

    for i in range(x):
        for j in range(y):
            if i + j > 15:
                print("sum is large")
            else:
                print("sum is not large")
                break
    k = 0
    if k % 2 == 0:
        print("k is even")
    else:
        print("k is odd")
```

```
if __name__ == "__main__": # do not count this as node
    myFunction() # function call, consider this as the starting node
```



$25 - 19 + 2 = 8$ (E-N+2P)

$7 + 1 = 8$ (R+1)

$7 + 1 = 8$ (P+1)