

## LAB EXERCISE 1

### TOPIC 1: PROGRAMMING PROBLEM SOLVING

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SECTION: 02

### QUESTION 1 [5 Marks]

Based on the following pseudocode in **Figure 1**, complete the trace table given in **Table 1**.

```
1. START      0, 0
   10, 0
2. READ n, m  70, 10
   70, 70
3. IF (n >= m)  0, 10
    3.1 START_IF
        3.1.1 IF (n > 10)
            3.1.1.1 START_IF
                3.1.1.1.1 IF (m > 10) ↗
                    3.1.1.1.1.1 PRINT "both n and m is greater than 10"
                    3.1.1.1.1.2 END_IF
                3.1.1.1.2 IF (n == m)
                    3.1.1.1.2.1 START_IF
                        3.1.1.1.2.1.1 PRINT "n is equal to m"
                        3.1.1.1.2.2 END_IF
                    3.1.1.1.2 END_IF
                3.2 END_IF
4. ELSE
    4.1 PRINT (n-m)*2      (0-10) ↗ ↘
5. PRINT n, m
6. END
```

Figure 1

### ANSWER:

Table 1

n	m	Output
0	0	0 0
10	0	10 0
20	10	20 10
20	20	both n and m is greater than 10 n is equal to m 20 20
0	10	- 20 0 10

INPUT : grade point  
 process : determine whether ...  
 output : input g. point , class of degree

## QUESTION 2 [20 Marks]

Write a pseudo code for a program that will implement the following decision table in **Table 2**. The program will print the input grade point and the class of degree based on a user input. The program will terminate the loop when a user input a sentinel value other than 'y' or 'Y'.

**Table 2**

GRADE POINT	Class of Degree
0.0 – 0.99	Failed
1.0 – 2.00	General degree
2.1 – 2.7	Second class lower
2.71 – 3.69	Second class upper
3.7 – 4.00	First Class

## ANSWER:

# 1. Start

```
2. Read value  
3. while ((value != 4) || (value != Y))  
    3.1 Read pointer  
        3.2 if (pointer <= 4.00)  
            3.2.1 Print pointer  
            3.2.2 Print "First class"  
        3.3 else if (pointer < 3.70)  
            3.3.1 Print pointer  
            3.3.2 Print "Second class upper"  
        3.4 else if (pointer < 2.71)  
            3.4.1 Print pointer  
            3.4.2 Print "Second class lower"  
        3.5 else if (pointer < 2.10)  
            3.5.1 Print pointer  
            3.5.2 Print "General degree"  
        3.6 else if (pointer < 1.00)  
            3.6.1 Print pointer  
            3.6.2 Print "Failed"  
        3.7 else  
            3.7.1 Print "error"  
    3.8 end if  
    3.9 Read value  
4. end while
```

# 5. Stop