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MATRIC NO: A24CS0230
SECTION: 02

QUESTION 1 [5 Marks]

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

```
1. START
2. READ n, m
3. IF (n >= m)
     3.1 START_IF
        3.1.1  IF (n > 10)                                    n > 10
           3.1.1.1 START_IF                                   m > 10
              3.1.1.1.1  IF (m> 10)
                 3.1.1.1.1.1 START_IF
                    3.1.1.1.1.1.1  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)              n = m
                 3.1.1.1.2.1 START_IF
                    3.1.1.1.2.1.1.1 PRINT "n is equal to m"
                 3.1.1.1.2.2 END_IF
           3.1.1.2 END_IF
     3.2 END_IF
4. ELSE                                     (-10) x 2 = -20
     4.1 PRINT (n-m)*2
5. PRINT n, m                               ( n - m ) x 2
6. END                                      =
```

Figure 1

Table 1

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

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. set repeat = y||Y
3. WHILE (repeat == y||Y)

4. READ Grade_Point
5. START-IF
6. IF (Grade_Point >=0.00) && (Grade_Point <=4.00)
   6.1 START -IF
      6.1.1 IF (Grade_Point >= 0.0) && (Grade_Point <=0.99)
         6.1.1.1 PRINT Grade_Point , "Failed"

   6.2 END-IF
6.2.1 IF (Grade_Point >= 1.0) && (Grade_Point <= 2.00)
   6.2.1.1 START-IF
      6.2.1.1.1 PRINT Grade-Point, "General degree"

   6.3 END-IF
6.3.1 IF (Grade-Point >= 2.1) && (Grade_Point <= 2.7)
   6.3.1.1 START-IF
      6.3.1.1.1 PRINT Grade-Point , "Second class lower"
   6.4 END-IF
```

6.4.1 IF (Grade_Point >= 2.71) && (Grade_Point <= 3.69)
 6.4.1.1 START-IF
 6.4.1.1.1 PRINT Grade-Point, "Second Class Upper"
  6.5 END-IF
 6.5.1 IF (Grade-Point >= 3.7) && (Grade_Point <= 4.00)
6.5.1.1 START-IF
 6 5.1.1.1 PRINT Grade-Point, "First Class"
  6.6 END-IF
 7. END-IF
 8. ELSE
 8.1 PRINT "Invalid"
9. END-WHILE

10. END