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UNIVERSITI TEKNOLOGI MALAYSIA

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Fakulti Komputeran

UNIVERSITI TEKNOLOGI MALAYSIA

PROBLEM SOLVING TEST

SEMESTER I 2014/2015

SOLUTIONS

PART A – OUTPUT TRACING QUESTION

QUESTION 1

[5 marks]

Table 1

EmployeeID	BasicSalary	OverTimeHours	Output
011	900	25	1150 1035
022	1200	15	1350 1035
033	1400	14	1540 1386
044	1600	25	1850 1665
055	1500	20	1700 1530

QUESTION 2

[20 marks] *reduced to 10 marks*

Table 2

Input	No	Sum	Output
0	0 3 6 10 14	2 5 11 21 35	14 35
1	1 4 7 11	2 6 13 24	11 24
5	5 9 13	2 11 24	13 24
10	10 14	2 16	14 16
12	12	2	12 2
Scoring	0.5m* 15 = 7.5m	0.5m*15 =7.5m	0.5m * 10 = 5m

QUESTION 3**[15 marks]****Table 3**

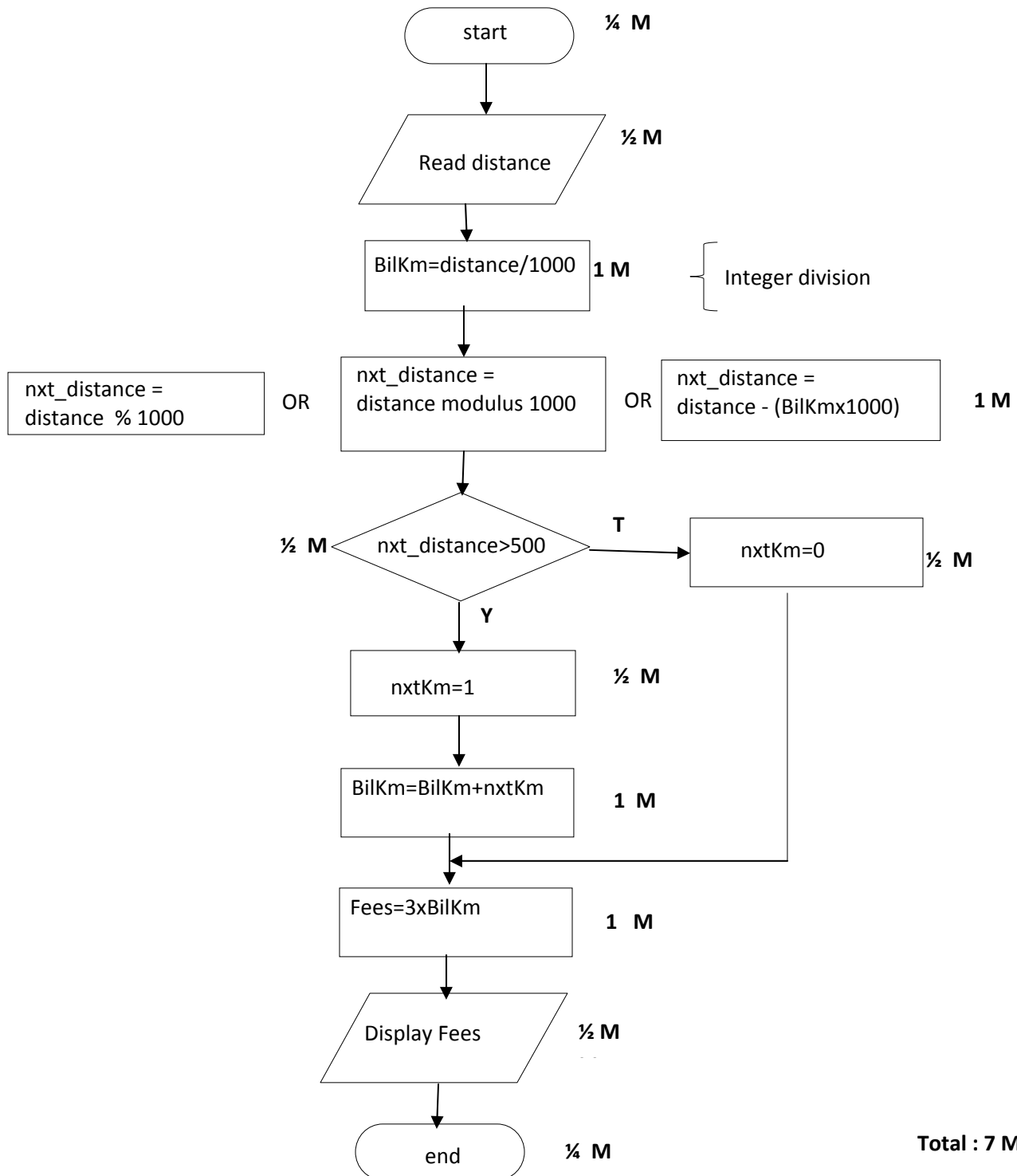
num_of_item	price_of_item	sale_type	subtotal	total	Output
20	10	R	2000	2100	20 100 2100
100	10	w		1000	100 10 1000
30	5	s			Error in input
1000	5	r	5000	5250	1000 5 5250
0					

Scoring

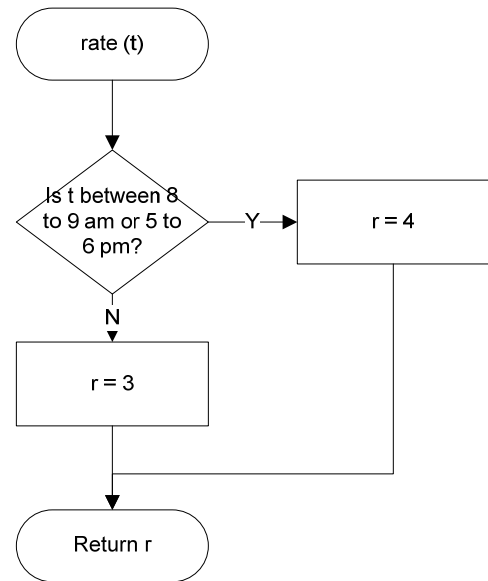
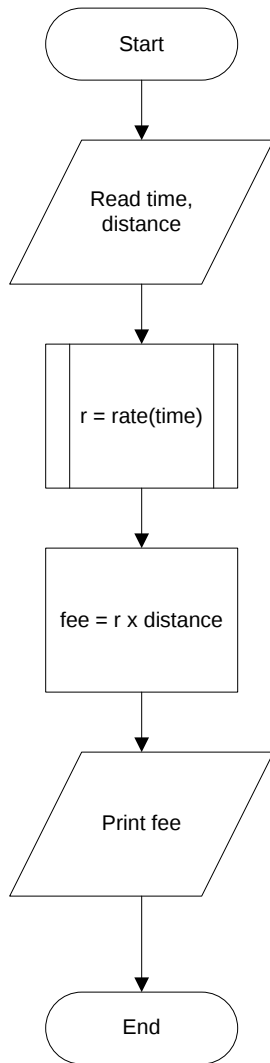
0.5m each = 2.5m	0.5m each = 2m	0.5m each = 2m	0.5m each = 1m	0.5m each = 1.5m	0.5m each = 6m =5 + 1 (blank input for input 0)
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PART B – PROBLEM SOLVING QUESTION

Question 1



Alternative answer:



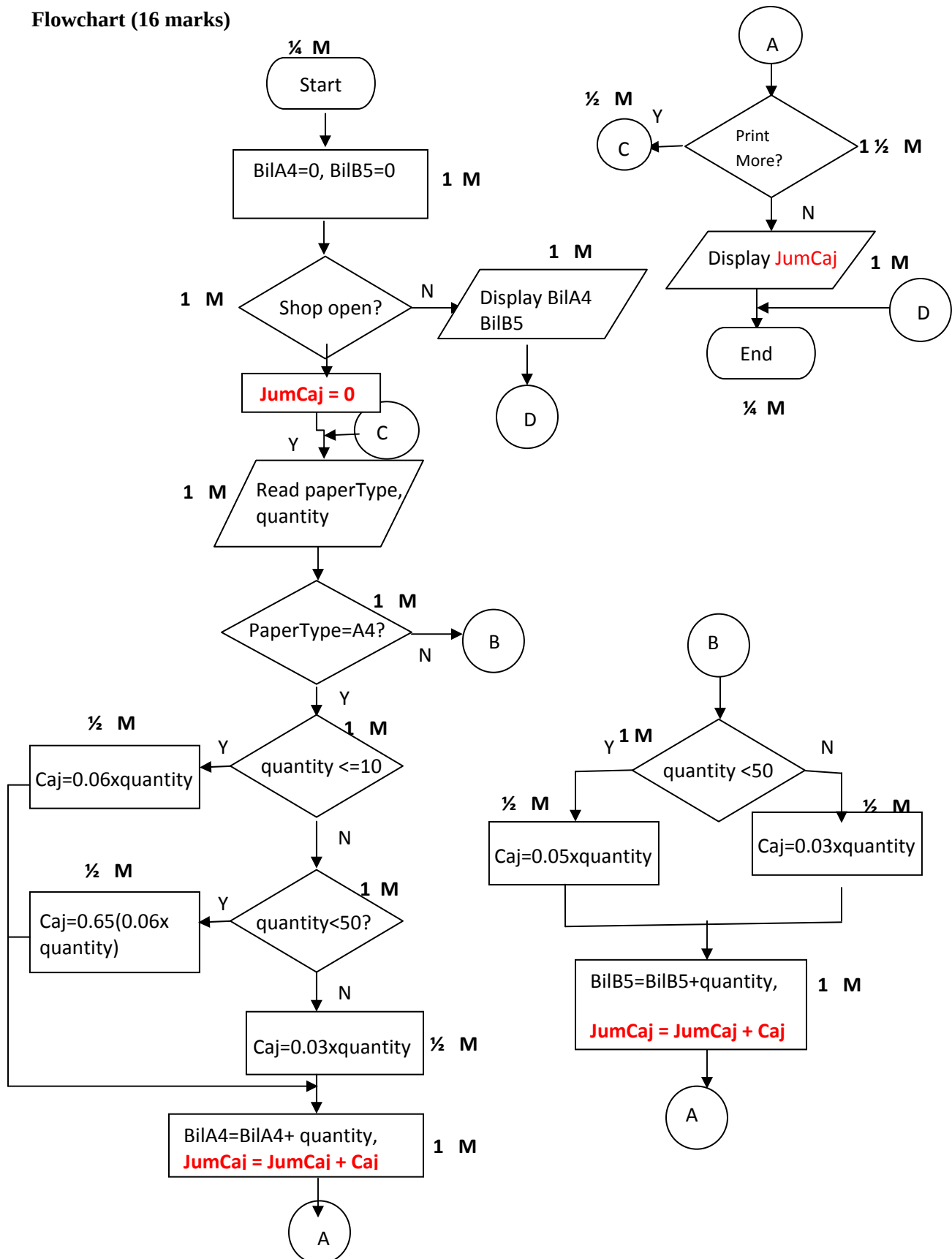
Question 2

List of possible input and output

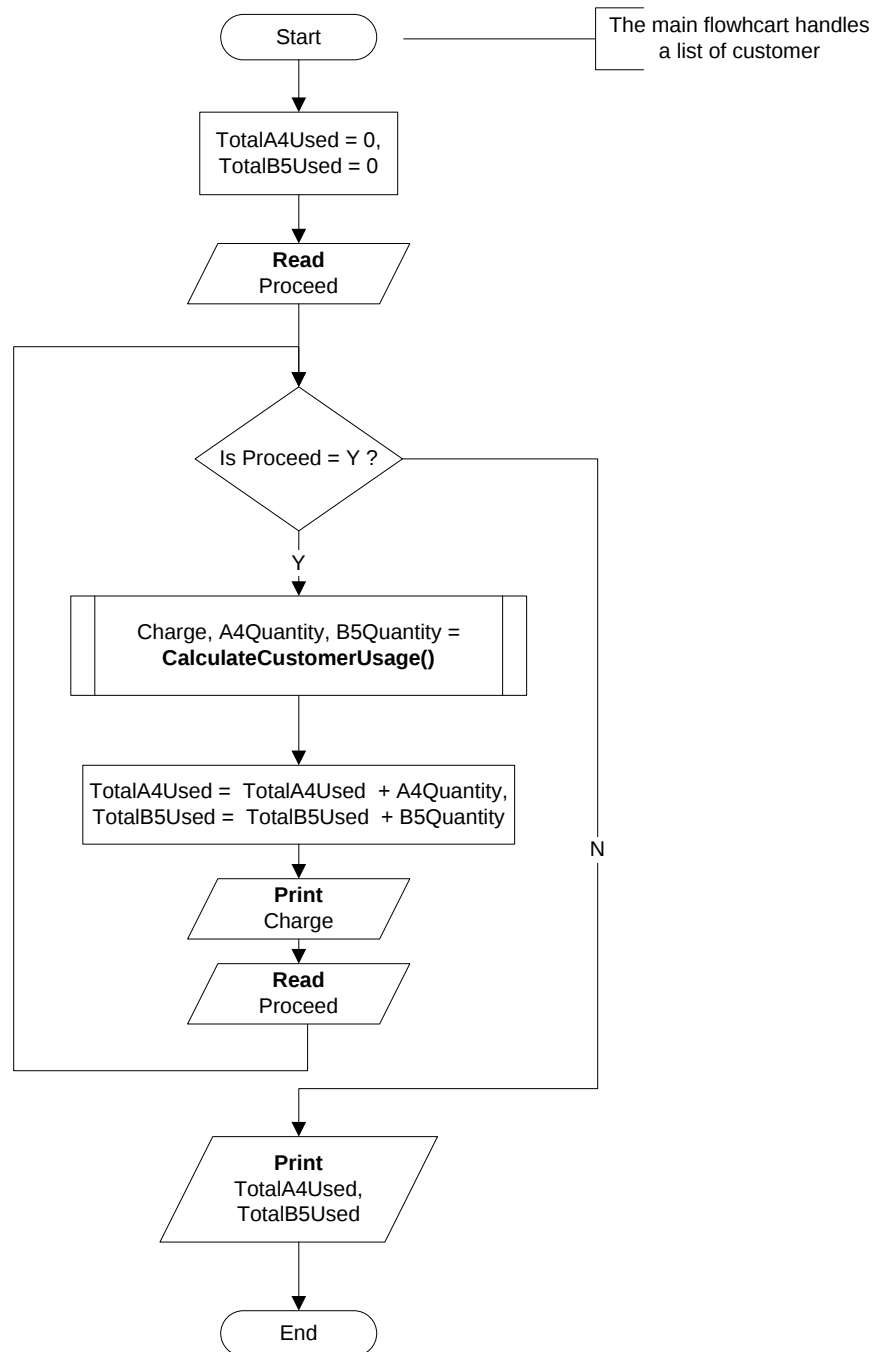
Input : Paper type, Number of copies (1 mark)

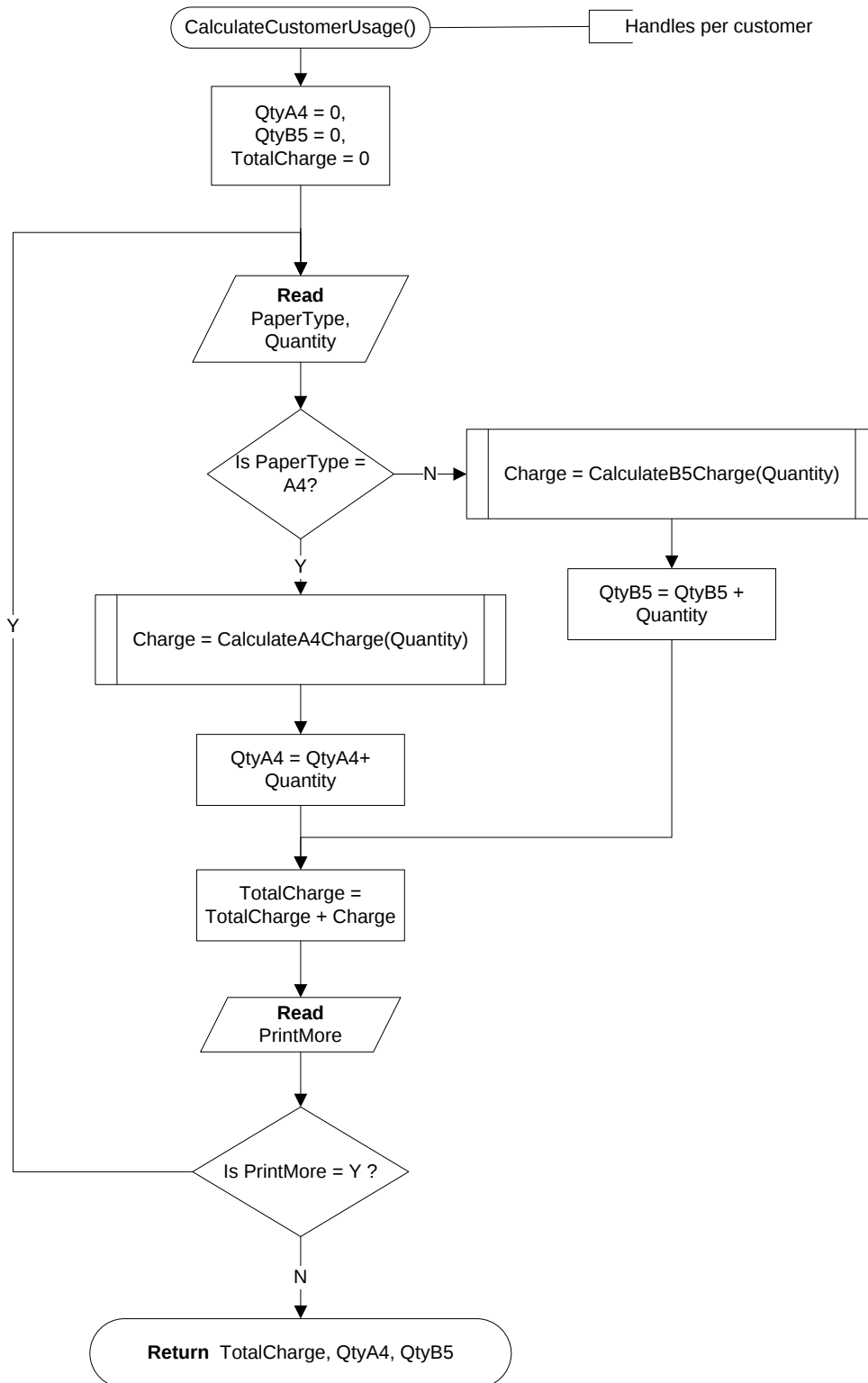
Output : caj, total number of A4 and B5 papers (1 mark)

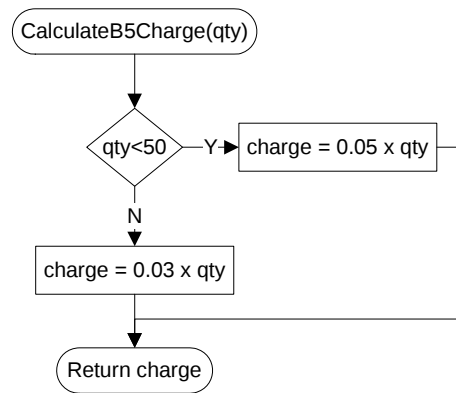
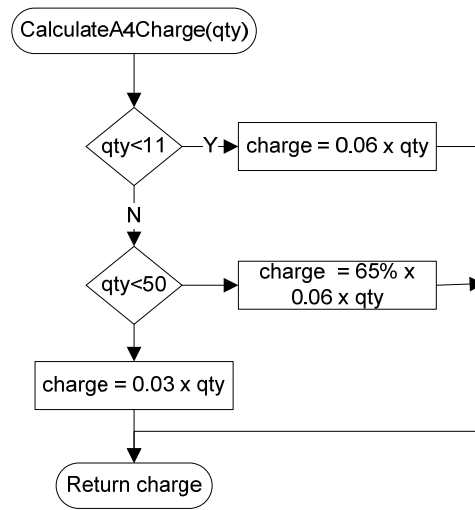
Flowchart (16 marks)



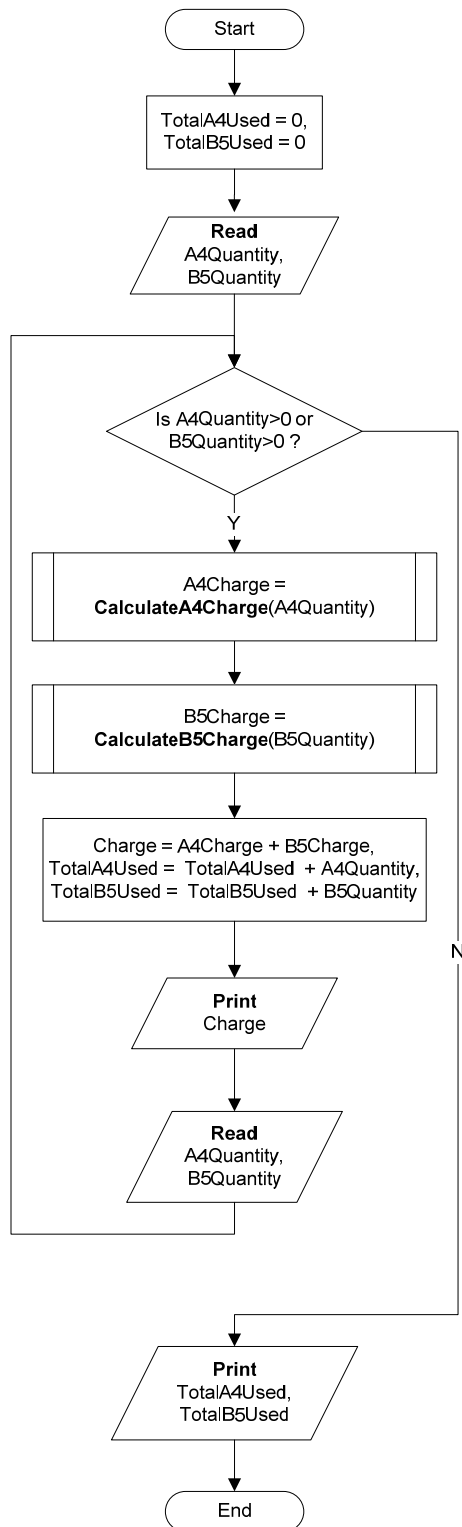
Alternative answer 1: Using structured and modular approach

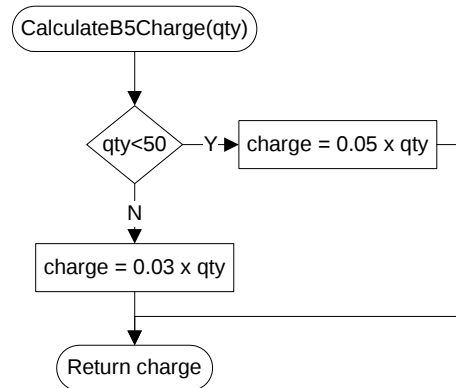
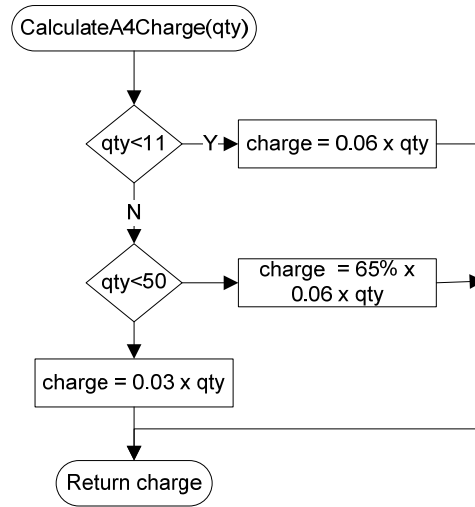






Alternative answer 2: Using sentinel values. The quantity of A4 and B5 papers printed also serve as the controller for the loop. The loop stops when both quantities are zero.





Alternative answer 3: Generalizing the tasks of calculating A4 charges and B5 charges into a single function.

