

- 8 A logic circuit is to be built to control the opening of a safe used to store money. There are two keys, **A** and **B**, and a time switch **C**. The safe can only open if both keys are used and the time switch is off.

key A	not used	0
	used	1
key B	not used	0
	used	1
time switch C	switch off	0
	switch on	1
safe X	safe cannot open	0
	safe can open	1

- (a) Write the logic expression for this problem.

..... [3]

- (b) Complete the truth table for this problem.

A	B	C	Working space	X
0	0	0		
0	0	1		
0	1	0		
0	1	1		
1	0	0		
1	0	1		
1	1	0		
1	1	1		