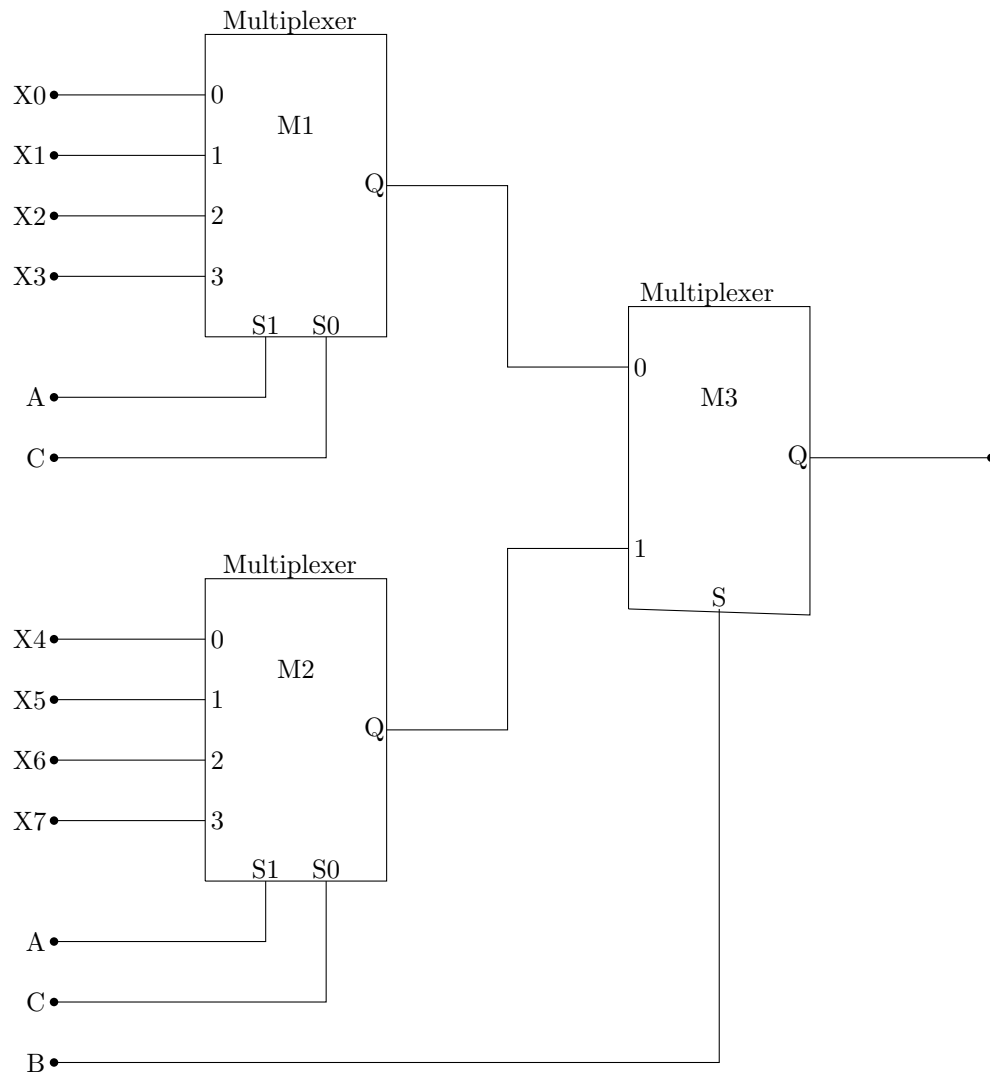


1. A Boolean digital circuit is composed using two 4-input multiplexers ( $M1$  and  $M2$ ) and one 2-input multiplexer ( $M3$ ) as shown in the figure.  $X0-X7$  are the inputs of the multiplexers  $M1$  and  $M2$  and could be connected to either 0 or 1. The select lines of the multiplexers are connected to Boolean variables  $A$ ,  $B$  and  $C$  as shown.



Which one of the following set of values of  $(X0, X1, X2, X3, X4, X5, X6, X7)$  will realise the Boolean function  $\overline{A} + \overline{A}.C + A.\overline{B}.C$  ?

- (a) (1, 1, 0, 0, 1, 1, 1, 0)
- (b) (1, 1, 0, 0, 1, 1, 0, 1)
- (c) (1, 1, 0, 1, 1, 1, 0, 0)

(d)  $(0, 0, 1, 1, 0, 1, 1, 1)$