

1. A 2×2 ROM array is built with the help of diodes as shown in the circuit below. Here W_0 and W_1 are signals that select the word lines and B_0 and B_1 are signals that are output of the sense amps based on the stored data corresponding to the bit lines during the read operation.

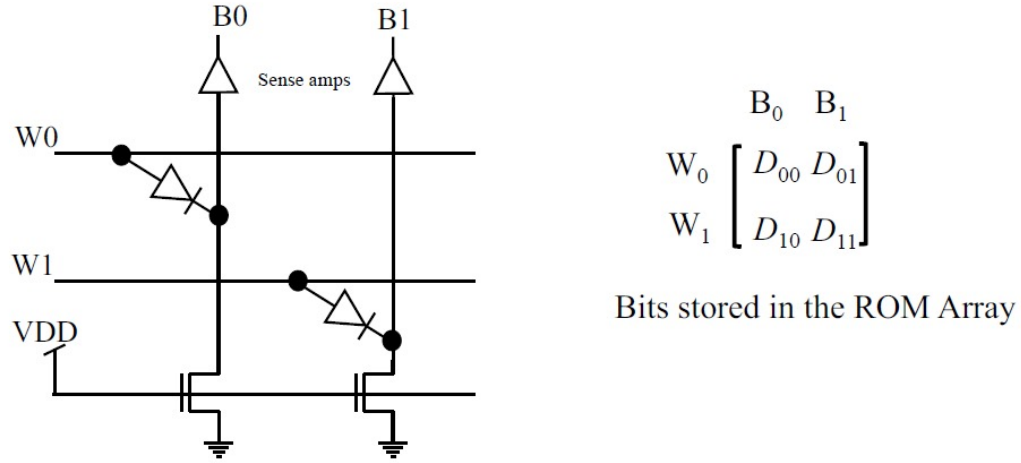


Figure 1: circuit

(GATE EC 2018)

During the read operation, the selected word line goes high and the other word line is in a high impedance state. As per the implementation shown in the circuit diagram (*Fig. 1*) above, what are the bits corresponding to D_{ij} (where $i=0$ or 1 and $j=0$ or 1) stored in the ROM?

- (A) $\begin{bmatrix} 1 & 0 \\ 0 & 1 \end{bmatrix}$ (B) $\begin{bmatrix} 0 & 1 \\ 1 & 0 \end{bmatrix}$ (C) $\begin{bmatrix} 1 & 0 \\ 1 & 0 \end{bmatrix}$ (D) $\begin{bmatrix} 1 & 1 \\ 0 & 0 \end{bmatrix}$