GATE

KATTELA SHREYA

December 2023

GATE IN - 2022

1. $\mathbf{A} = a_1a_0$ and $\mathbf{B} = b_1b_0$ are two 2-bit unsigned binary numbers. If $\mathbf{F}(a_1, a_0, b_1, b_0)$ is a Boolean function such that $\mathbf{F} = 1$ only when $\mathbf{A} > \mathbf{B}$, and $\mathbf{F} = 0$ otherwise, then $\mathbf{F}$ can be minimized to the form _____

   (a) $a_1\bar{b_1} + a_1a_0\bar{b_0}$

   (b) $a_1\bar{b_1} + a_1a_0\bar{b_0} + a_0\bar{b_0}\bar{b_1}$

   (c) $a_1a_0\bar{b_0} + a_0\bar{b_0}\bar{b_1}$

   (d) $a_1\bar{b_1} + a_1a_0\bar{b_0} + a_0\bar{b_0}b_1$