1. A counter is constructed with three D flip-flop. The input-output pairs are named (D_0,Q_0), (D_1,Q_1), and (D_2,Q_2), where the subscript 0 denotes the least significant bit. The output sequence is desired to be the Gray-code sequence 000,001,011,010,110,110,111,101 and 100, reapeating periodically. Note that the bits are listed in the Q_2,Q_1,Q_0 format. The combinational logic expreesion for D_1 is

   (A) $Q_2Q_1Q_0$

   (B) $Q_2Q_0 + Q_1\bar{Q}_0$

   (C) $\bar{Q}_2Q_0 + Q_1\bar{Q}_0$

   (D) $Q_2Q_1 + \bar{Q}_2\bar{Q}_1$