Name: Id#

COE 202, Term 132

Digital Logic Design

Quiz# 2

 Date: Tuesday, Feb. 25

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# **Q1.** Prove the identity of each of the following Boolean functions using algebraic manipulation. Start with the left-hand side expression and derive from it the right-hand side expression.

## $\overbar{a} \overbar{c}+a d+b \overbar{c} d=\overbar{a} \overbar{c}+a d$

## $\overbar{( \overbar{a} [\overbar{c}+d]+c \left[\overbar{b} +\overbar{d} \right]+\overbar{c} \overbar{d} )}=a d (b+\overbar{c})$

**Q2.** Given the Boolean functions $F\left(A, B,C\right)=\sum\_{}^{}m\left(0, 2, 4, 7\right)$ and $G\left(A, B,C\right)=\prod\_{}^{}M\left(0, 3, 5, 6\right)$.

## Give the *algebraic* sum of minterms expression for *F*.

## Express the function *G* as a sum of minterms, $G=\sum\_{}^{}m\left(…\right)$

## Express the function *F.G* as a sum of minterms, $F.G=\sum\_{}^{}m\left(…\right)$

## Express the function *F+G* as a product of maxterms, $F+G=\prod\_{}^{}M\left(…\right)$