## COE 200, Term 001

Fundamentals of Computer Engineering
Quiz\# 2
Date: Monday, Oct. 9
Q.1. Prove the identity of each of the following Boolean functions using algebraic manipulation:
a.

$$
\mathrm{AB}+\mathrm{A}^{`} \mathrm{C}^{`}+\mathrm{A}^{`} \mathrm{BC}+\mathrm{A}^{`} \mathrm{~B} \mathrm{C}=\mathrm{A}^{`}+\mathrm{B}
$$

b.

$$
\mathrm{A}^{`} \mathrm{C}+\mathrm{AC}^{`} \mathrm{D}+\mathrm{AC}+\mathrm{A}^{`} \mathrm{~B}^{`} \mathrm{C}^{`} \mathrm{D}=\mathrm{C}+\mathrm{D}\left(\mathrm{~A}+\mathrm{B}^{`}\right)
$$

Q.2. Consider the following reduced Boolean function $F(A, B, C, D)=A C+A^{`} C^{`}+B C+A^{`} D$ :
a. Express the function in a sum of minterms and a product of maxterms.
b. Find the dual and the complement of the function.

