Name: Id#

COE 202, Term 122

Digital Logic Design

Quiz# 3

Date: Monday, March 11

# 

# **Q1**. For the Boolean function F(W, X, Y, Z)=m(0, 1, 2, 3, 7, 8, 10), d(W, X, Y, Z)=m(5, 6, 11, 13, 15) shown in the k-map below:

WX

10

11

01

00

YZ

1

1

1

1

00

0

x

1

x

01

0

x

x

0



11

1

0

x

1

10

# Identify all the *prime implicants* and the *essential prime implicants* of F.

# Simplify the Boolean function **F** into a minimal sum-of-products expression.

# Simplify the Boolean function **F** into a minimal product-of-sums expression.

# **Q2**. The following Boolean expression: BE + B`DE` is a simplified version of the expression: A`BE + BCDE + BC`D`E + A`B`DE` + B`C`DE`. Are there any don`t care conditions? If so, what are they?