Name: Id#

COE 202, Term 131

Digital Logic Design

Quiz# 3

Date: Thursday, Oct. 31

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# **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, 15**) shown in the k-map below:

WX

10

11

01

00

YZ

1

1

1

1

00

0

x

1

x

01

0

0

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: A’C’ + AC + B’D’ is a simplified version of the expression: A’C’D’ + A’BC’ + ABC + ACD’. Are there any don`t care conditions? If so, what are they?