Name: Id#

COE 202, Term 142

Digital Logic Design

Quiz# 3

Date: Tuesday, March 17

# 

# **Q1** For the following Boolean function F(A, B, C, D)=m(0, 1, 2, 5, 6, 7, 8, 9, 10, 12, 13)

AB

CD

00

01

11

10

00

01

11

10

1

1

0

1

0

1

1

1

1

1

0

0

1

1

0

1

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

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

# **Q2** Consider the following Boolean function **F** together with the don`t care conditions **d**

## F(A, B, C, D)=m(3, 6, 13), d(A, B, C, D)=m(1, 4, 7, 9, 11, 12, 14, 15)

AB

CD

00

01

11

10

00

01

11

10

0

X

1

0

X

0

X

1

X

1

X

X

0

X

X

0

# Simplify the Boolean function **F** together with the don`t care conditions **d,** into **minimal** **product-of-sums** expression.