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Faculty: IT

Course Name: Digital Computer Fundamentals

Course Code: MATH 8127

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Report: Individual Assignment

CANONICAL FORMS MIN TERMS(m, SOP) and MAX TERMS(M, POS)

QUESTION 1: A+BC’

=> THIS IS SOP

DOMAIN

A,B and **C** are domain

and **A** is missing bc**, SO**

=> A = A(B+B’)(C+C’)
=> A= ABC+ABC’+AB’C+AB’C’

and **BC’** is missing **A**

then **BC’**

=> BC’=BC’(A+A’)
=> BC’=BC’A+BC’A’=ABC’+A’BC’

Now combine all terms

A+BC’=ABC+ABC’+AB’C+AB’C’+ABC’+A’BC’

REMOVE DUPLICATES

A+BC’ = ABC+AB’C+ABC’AB’C’+A’BC’

QUESTION 2: (A+B+C)(A’+B’)

This is POS

DOMAIN: A,B and C

Term A’+B’ is missing C

then

A’+B’= A’+B’+(C.C’)

=>(A’+B’+C)(A’+B’+C’

Now Combine terms

=> **(A+B+C)(A’+B’) = (A+B+C)(A’+B’+C)(A’+B’+C’)**

Question 3: X’+Y’Z+Z

SOP

DOMAIN

XYZ are domain

Term X missing YZ
Term Y’Z missing X
Term Z missing XY

then

X=X(Y+Y’)(Z+Z’)
X= XYZ+XYZ’+XY’Z+XY’Z’

Y’Z= Y’Z(X+X’)
Y’Z= Y’ZX+Y’ZX’
Y’Z= XY’Z+X’Y’Z

Z=Z(X+X’)(Y+Y’)
Z=ZXY+ZXY’+ZX’Y+ZX’Y’
Z=XYZ+XY’Z+X’YZ+X’Y’Z

Now Combine terms

X’+Y’Z+Z = XYZ+XYZ’+XY’Z+XY’Z’+ XY’Z+X’Y’Z+XYZ+XY’Z+X’YZ+X’Y’Z

Remove duplicates:

X’+Y’Z+Z = XYZ+X’YZ+XY’Z+XYZ’+X’Y’Z+XY’Z’

Question 4: Convert the Boolean function F = AB+AB’ into Product of MAX .term

F = AB+AB’

F = A(B+B’) by Distributive

F = A(1) by B+B’ =1

F = A