National University of Computer and Emerging Sciences, Lahore Campus



Course: Digital Logic Design
Program: BS (Computer Science)

BS (Computer Science)
20 Minutes
15-June-2021

Semester:
Total Marks:
Weight

Section: B Exam: Quiz 1 Semester: Spring 2021
Total Marks: 15
Weight 3 %
Page(s): 2
Reg. No.

EE-227

Course Code:

Instruction/Notes:

Calculators are strictly not allowed in all exams

Plagiarism will be dealt seriously causing an F in course

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1-	III ali	o bit number	. System, s	SULVE (41)X	· (O)10 — (

Duration:

Paper Date:

)16

2- Prove the identity $Y + \overline{X}Z + X\overline{Y} = X + Y + Z$

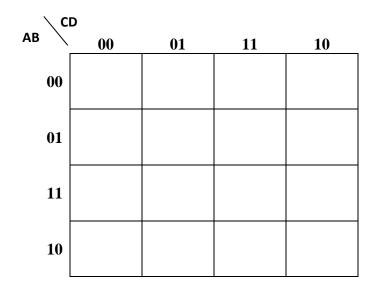
3- Optimize the following expressions $F(A, B, C, D) = \Pi M(0, 2, 6, 7, 8, 9, 10, 12, 14, 15)$

Sum-of-products =

Product of-sums forms=

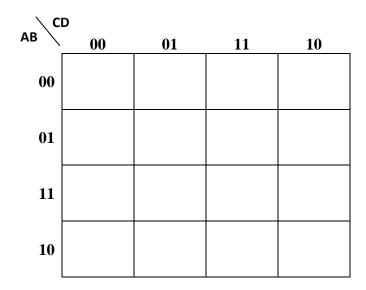
Use only given **K-Maps** to optimize the function into:

(i) Product of Sums (POS) form



$$\mathbf{F}(\mathbf{A},\mathbf{B},\mathbf{C},\mathbf{D}) = \underline{\hspace{1cm}}$$

(ii) Sum of Products (SOP) form



$$\mathbf{F}(\mathbf{A},\mathbf{B},\mathbf{C},\mathbf{D}) = \underline{\hspace{1cm}}$$