National University of Computer and Emerging Sciences, Lahore Campus



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

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

Section: D Exam: Quiz 1 Course Code: EE-227 Semester: Spring 2021

Total Marks: 15
Weight 3 %
Page(s): 2
Reg. No.

Instruction/Notes: Calculators are strictly not allowed in all exams

Paper Date:

Plagiarism will be dealt seriously causing an F in course

1. In an 8 bit number system, solve (27)8 + (8.2)10 = ()16 (Show Working)

2- Prove the identity $A\overline{D} + \overline{A}B + \overline{C}D + \overline{B}C = (\overline{A} + \overline{B} + \overline{C} + \overline{D})(A + B + C + D)$

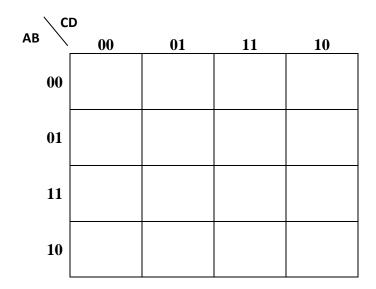
3- Optimize the following expressions $T = (\overline{A} + \overline{B} + D)(\overline{A} + \overline{D})(A + B + \overline{D})(A + \overline{B} + C + D)$

Sum-of-products = $\sum m$ (

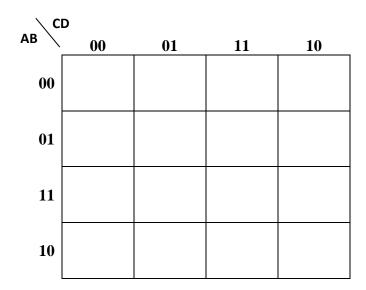
Product of-sums forms: $\prod M$ (

Use only given **KMaps** to optimize the function into:

(i) Product of Sums (POS) form



(ii) Sum of Products (SOP) form



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