BRAC UNIVERSITY
Inspiring Excellence

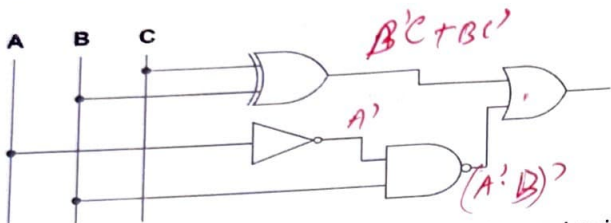CSE260: Digital Logic Design
Summer 2025
Quiz - 02
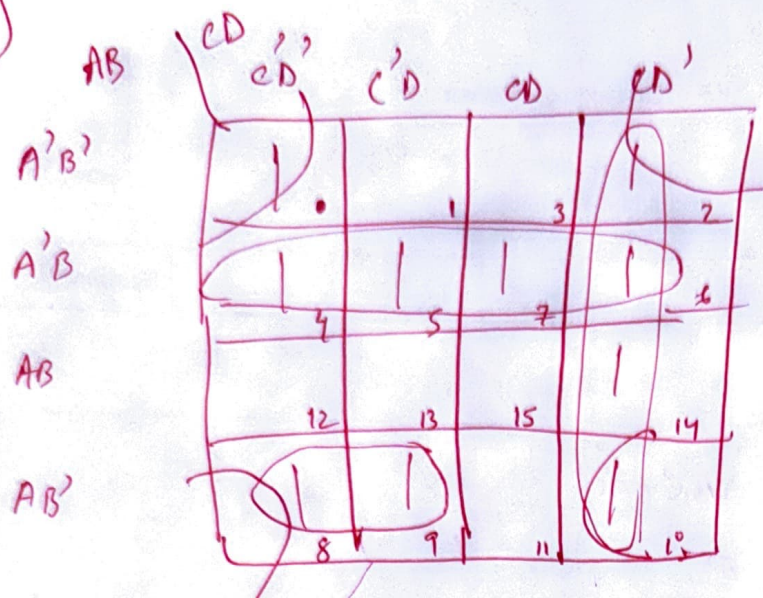Duration: 30 minutes

A

Name:		ID:	Section:

		5
1.CO2	 a. Determine the Logic function of the above circuit. b. Simplify the function you obtained in part(a) using Boolean algebra	
2.CO2	Convert the Boolean function to its Canonical POS form. $F(A,B,C) = C' + A \oplus B$	5
3.CO2	$F(A,B,C,D)=\Sigma(0,2,4,5,6,7,8,9,10,14)$ Use Karnaugh Map to find the simplified expression.	5

Circuit labels: $B'C + BC'$, A', $(A'B)'$

1)

a) $(A'B)' + B'C + BC'$

b) $A + B' + B'C + BC'$

$= A + B'(1+C) + BC'$

$= A + B' + BC'$

$= A + (B'+B)(B'+C')$

$= A + B' + C'$

2) $f = C' + A \oplus B$

$= C' + A'B + AB'$

$= (C' + A'B + A)(C' + A'B + B')$

$= (A + C' + A')(A + C' + B)(B' + C' + A')$

$(B' + C' + B)$

$= (A + B + C')(A' + B' + C')$

$= 001, 111$

$= \pi (1, 7)$

3)

Karnaugh map with rows $A'B'$, $A'B$, AB, AB' and columns $C'D'$, $C'D$, CD, CD'.

$$F = A'B + CD' + AB'C' + B'D'$$

* Alternate Solution is possible