CSE -260

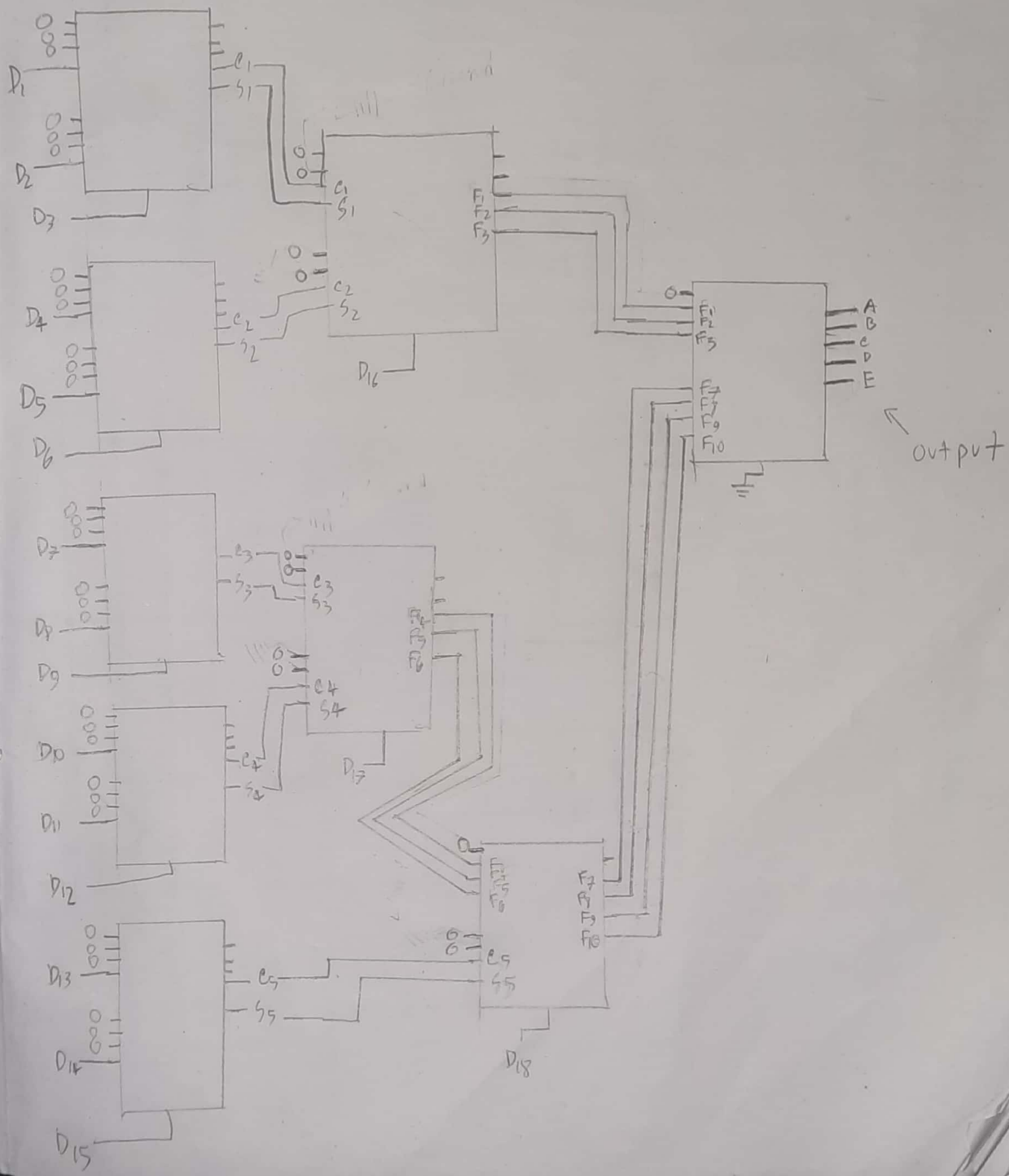## Assignment-03

Name: MD Ikramul Kayes
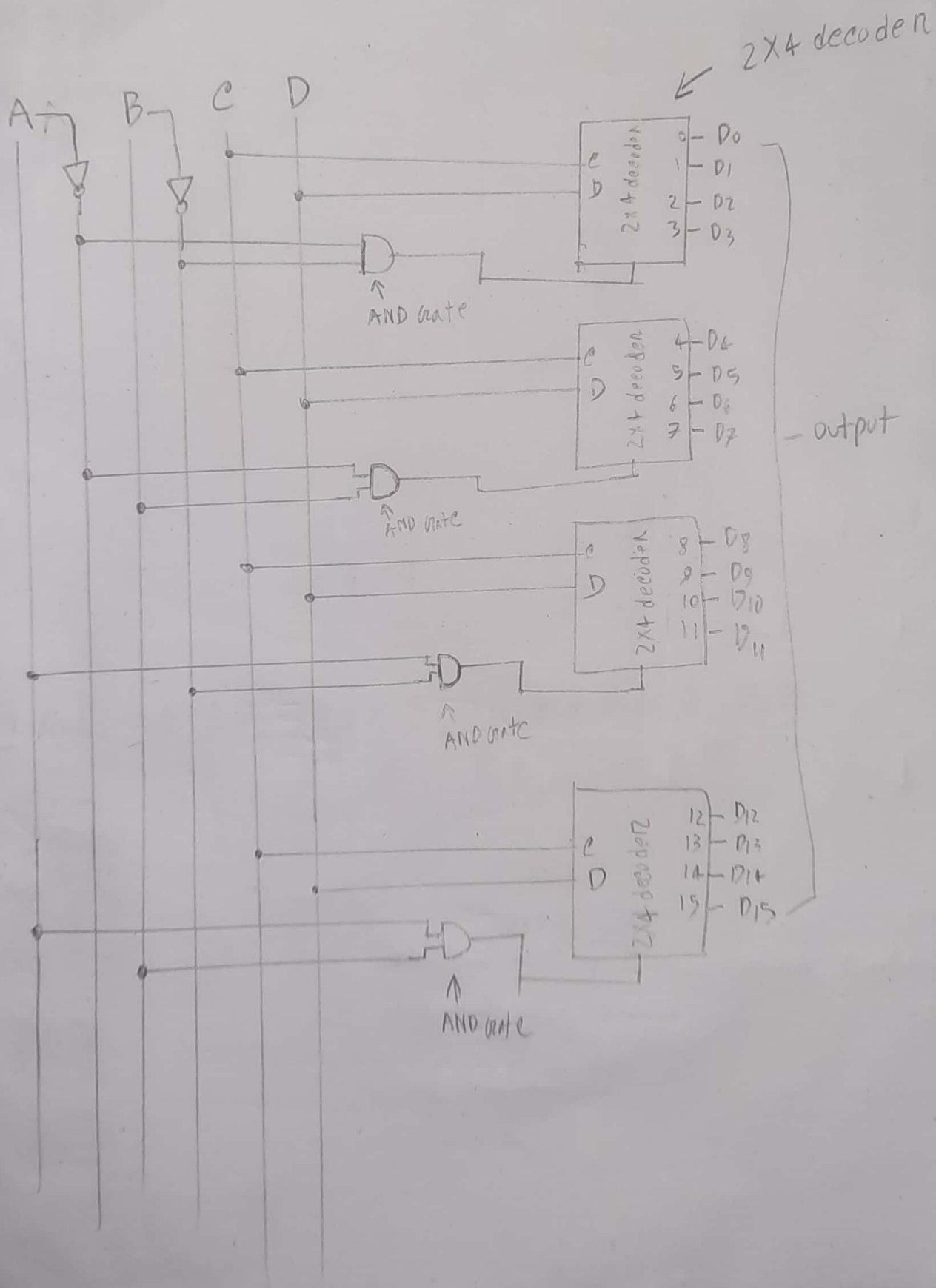
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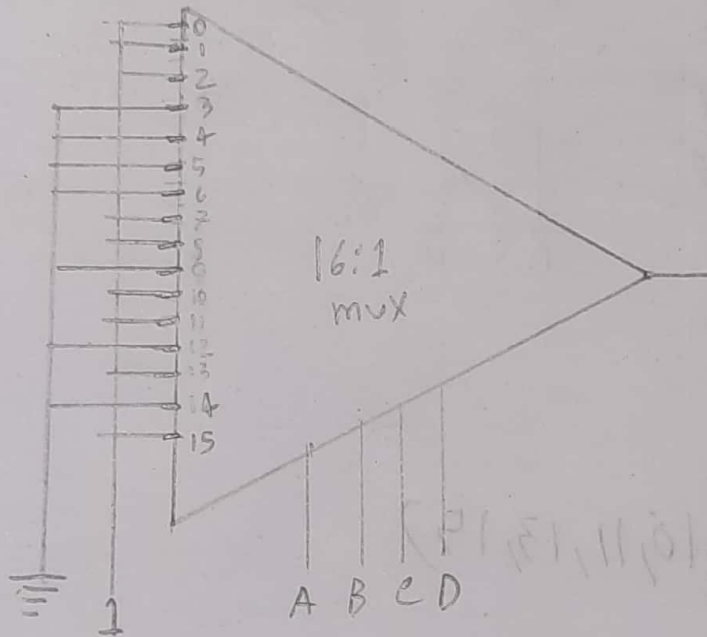# Question 1: Ans:

Question 2:) Ans: Lets assume 4 bit number is ABCD

2X4 decoder

A   B   C   D

AND Gate

2X4 decoder — D0, D1, D2, D3 (0,1,2,3) with C, D inputs

2X4 decoder — D4, D5, D6, D7 (4,5,6,7) with C, D inputs

AND Gate

2X4 decoder — D8, D9, D10, D11 (8,9,10,11) with C, D inputs

AND Gate

2X4 decoder — D12, D13, D14, D15 (12,13,14,15) with C, D inputs

AND Gate

output

Question 3:

a] Ans:

$$F(A, B, C, D) = \sum(0, 1, 2, 7, 8, 10, 11, 13, 15)$$

16:1 mux

A B C D

b] Ans: $F(A, B, C, D) = \sum(0, 1, 2, 7, 8, 10, 11, 13, 15)$

	0	1	2	3	4	5	6	7
A'	1	1	1					1
A	1		1	1		1		1
	1	A'	1	A	0	A	0	1

A 1 0

0
1
2
3
4   8:1
5   mux
6
7

B C D
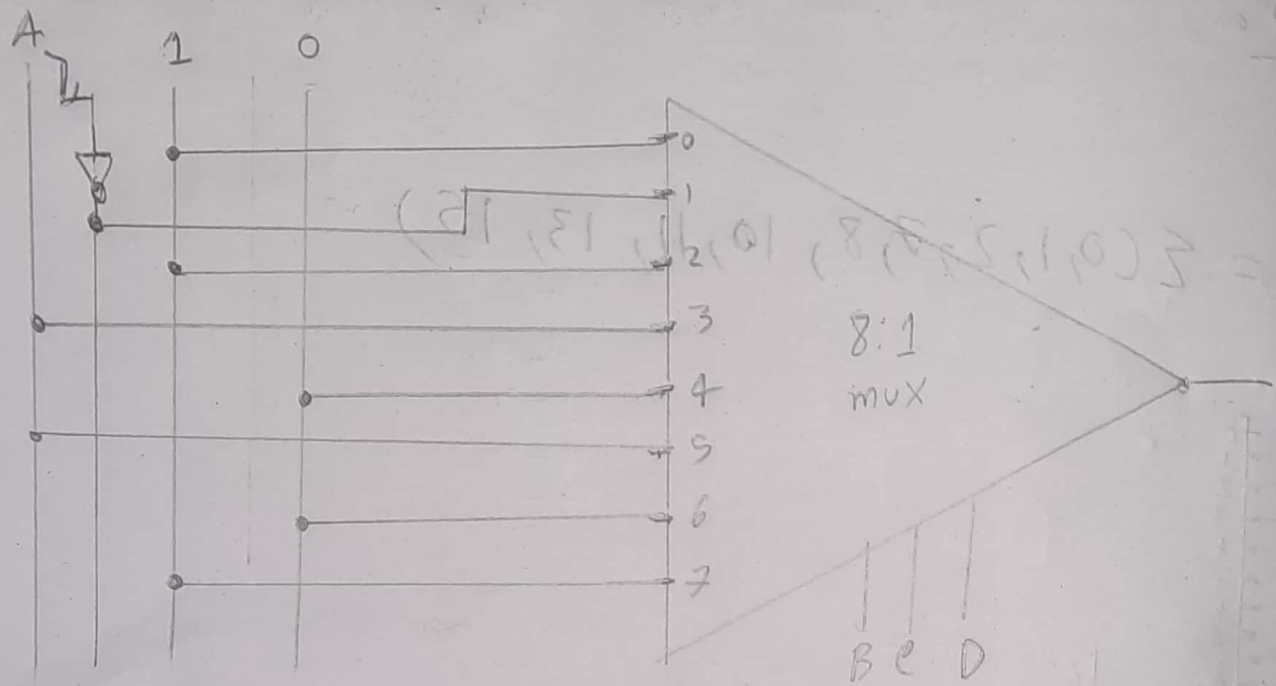
C] $F(A,B,C,D) = \Sigma(0,1,2,7,8,10,11,13,15)$

	0	1	2	3
$A'B'$	1	1	1	
$A'B$				
AB'	1		1	1
AB		1		1

$(A'B' + AB')$ $A'B' + AB$ $(A'B' + AB')$ $A'B + AB' + AB$

$= B'$ $= B'$ $= A'B + A$

                                     $= A + B$

A

B

B'

A'B'+AB

0
1
2
3

4:1
mux

C D