


National University of Computer and Emerging Sciences, Lahore Campus

	Course: Program: Duration: Date Section:	DLD Lab BS (Computer Science) 50 minutes 26-03-18 D2 (A)	Course Code: Semester: Total Marks: Weight Pages:	EL227 Spring 2018 50 25% 2
---	---	---	--	---

Mid Term Exam

NAME: _____

Roll #: _____

READ THE INSTRUCTIONS CAREFULLY.

1. Final Submissions should be done in your respective section folder on **sandata/xeon/Spring2018/AbdulKhalig/DLDSectionD2/MidSubmission**.
2. LogicWorks File must be renamed after your roll number e.g., **"17L-4125"**. Multiple submissions are not allowed (if done, only first one will be considered).
3. For your ease, Pin Configurations of all ICs is given in word file named **"ICs Info"** in **folder sandata/xeon/Spring2018/AbdulKhalig/DLDSectionD2**.

Problem Statement: Implement the following Boolean function using 4x1 multiplexer and external logic gates.

$$F(A,B,C,D) = \sum(5,6,8,9,10,15)$$

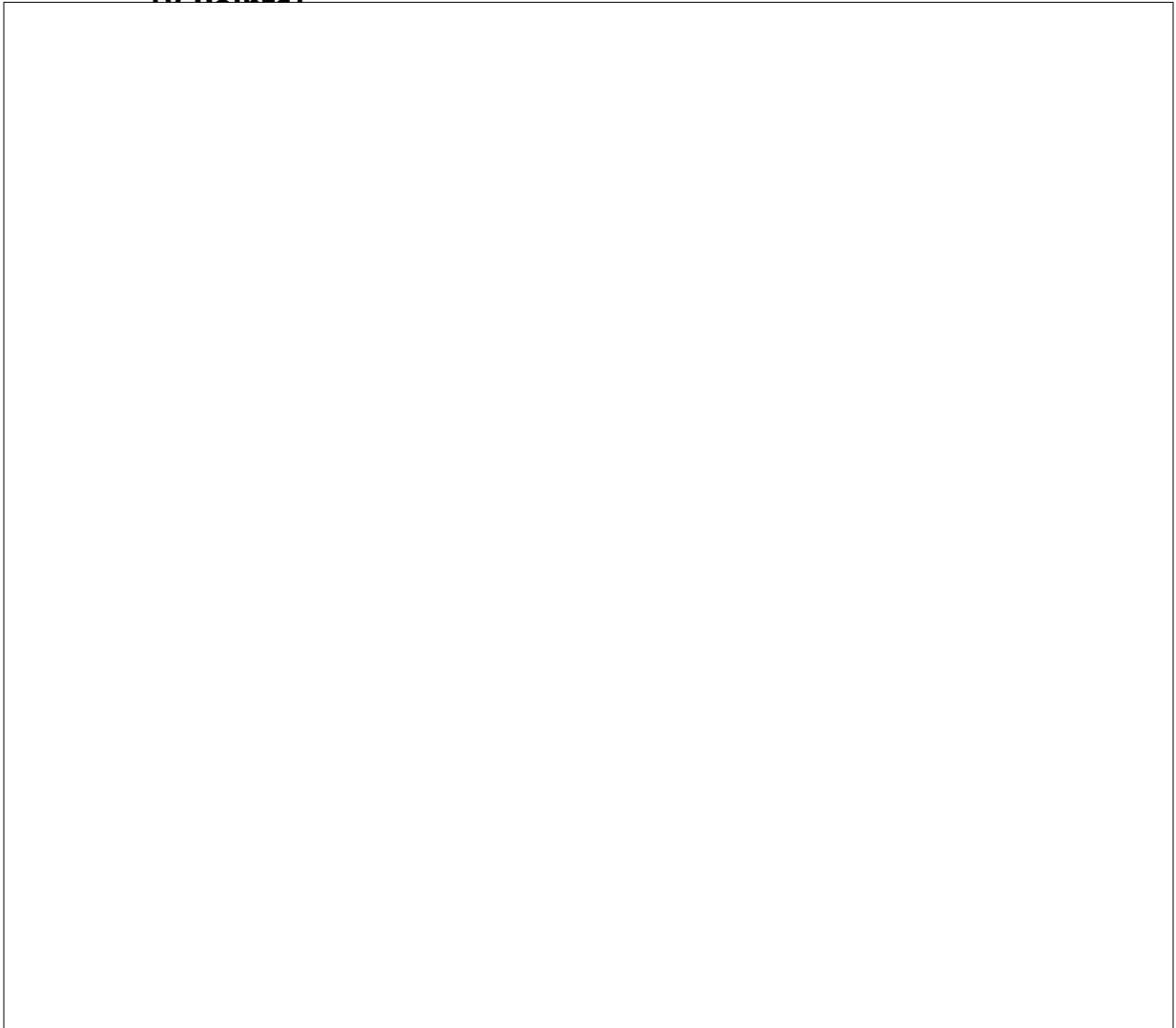
- a. Draw the truth table for above problem statement.

[2 Point]

A	B	C	D	Z
0	0	0	0	
0	0	0	1	
0	0	1	0	
0	0	1	1	
0	1	0	0	
0	1	0	1	
0	1	1	0	
0	1	1	1	
1	0	0	0	
1	0	0	1	
1	0	1	0	
1	0	1	1	
1	1	0	0	
1	1	0	1	
1	1	1	0	
1	1	1	1	

- b.** Draw the complete circuit diagram using 2-input logic gates only.

[8 Points]



- c.** Implement the circuit of part (b) on LogicWorks Tool and verify the results. **[15 Points]**

- d.** Implement the circuit of part (b) on the trainer board and verify the outputs.
(Note: Use as minimum no. of logic gates as possible)
[25 Points]