	AIR UNIVERSITY
	DEPARTMENT OF ELECTRICAL AND COMPUTER ENGINEERING
	EXPERIMENT NO 4

Lab Title: LAB 7

Student Name: SAAD UR REHMAN **Reg. No:** 230434

Objective: Experimentally check the operation of 7-segment display using BCD to 7-segment Decoder 7447.

LAB ASSESSMENT:

Attributes	Excellent (5)	Good (4)	Average (3)	Satisfactory (2)	Unsatisfactory (1)
Ability to Conduct Experiment					
Ability to assimilate the results					
Effective use of lab equipment and follows the lab safety rules					

Total Marks: _____ Obtained Marks: _____

LAB REPORT ASSESSMENT:

Attributes	Excellent (5)	Good (4)	Average (3)	Satisfactory (2)	Unsatisfactory (1)
Data presentation					
Experimental results					
Conclusion					

Total Marks: _____ Obtained Marks: _____

Date: _____ Signature: _____

Experiment 7

Seven Segment display

OBJECTIVES:

- To experimentally check the operation of 7-segment display using BCD to 7-segment decoder 4774.

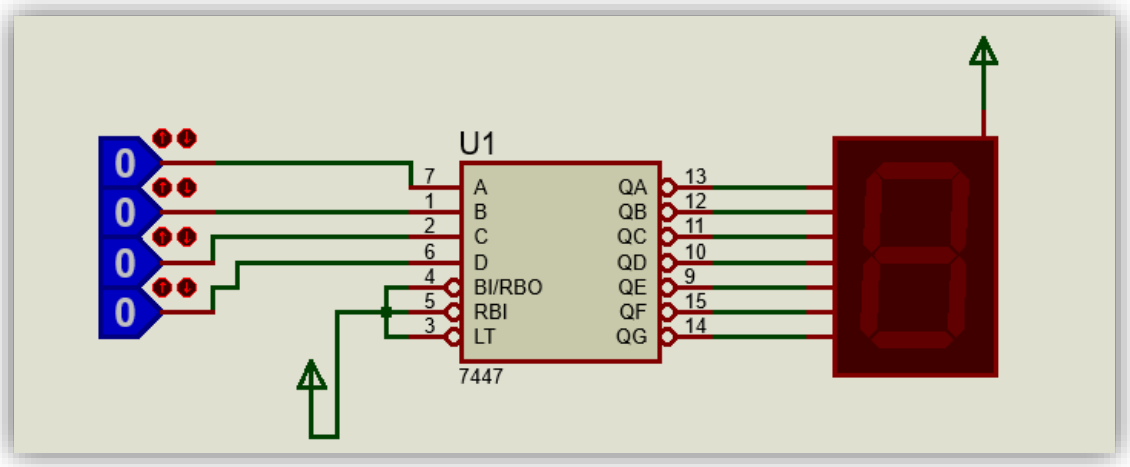
Requires component and Equipment's:

- ICs as required.
- Digital Electronic trainer.

Procedure:

- Check the configuration of your 7-segment display using multi-meter. Find out its configuration and pin-assignment.
- Create the truth table to describing the function of a BCD to 7-segment decoder accordingly to the configuration of your display.

INPUT				OUTPUT						
A	**B**	**C**	**D**	**a**	**b**	**c**	**d**	**e**	**f**	**g**
0	0	0	0	1	1	1	1	1	1	0
0	0	0	1	0	1	1	0	0	0	0
0	0	1	0	1	1	0	1	1	0	1
0	0	1	1	1	1	1	1	0	0	1
0	1	0	0	0	1	1	0	0	1	1
0	1	0	1	1	0	1	1	0	1	1
0	1	1	0	1	0	1	1	1	1	1
0	1	1	1	1	1	1	0	0	0	0
1	0	0	0	1	1	1	1	1	1	1
1	0	0	1	1	1	1	1	0	1	1



K map of "a":

AB \ CD	**00**	**01**	**11**	**10**
00	1	0	1	1
01	0	1	1	1
11	X	X	X	X
10	1	1	X	X

F=C+A+BD+B'D'

K map of "b":

AB \ CD	**00**	**01**	**11**	**10**
	1	1	1	1
	1	0	1	0

00	X	X	X	X
01	1	1	X	X
11				
10				

F=B’+C’D’+CD

K map of “c”:

AB \ CD	**00**	**01**	**11**	**10**
00	1	1	1	0
01	1	1	1	1
11	X	X	X	X
10	1	1	X	X

F=C’+D+B

K map of “d”:

AB \ CD	**00**	**01**	**11**	**10**
00	1	0	1	1
01	0	1	0	1
11	X	X	X	X
10	1	1	X	X

F=A+B’C+CD’+B’D’+BC’D

K map of “e”:

CD

AB	00	01	11	10
00	1	0	0	1
01	0	0	0	1
11	X	X	X	X
10	1	0	X	X

F=CD'+B'D'

K map of "f":

AB \ CD	00	01	11	10
00	1	0	0	0
01	1	1	0	1
11	X	X	X	X
10	1	1	X	X

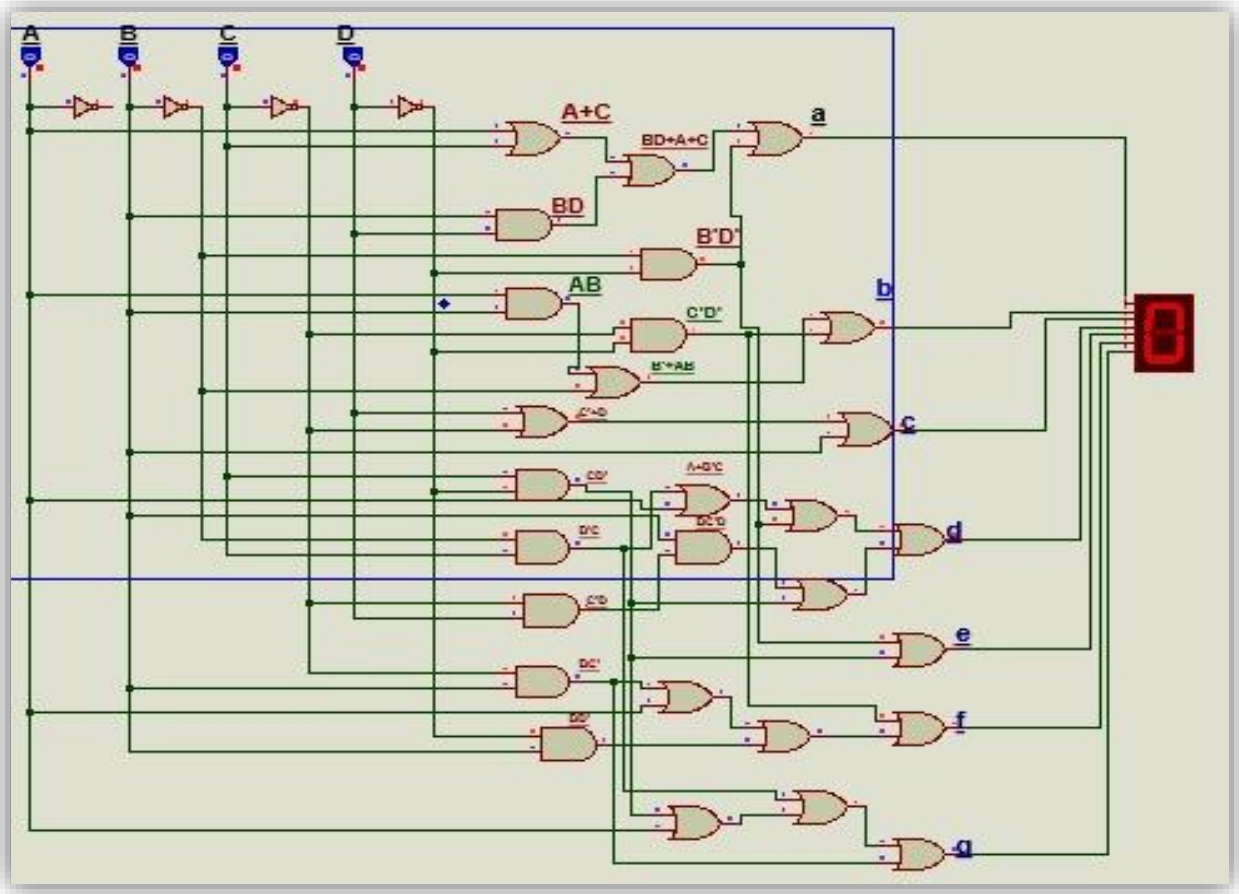
F=A+BD'+BC'+C'D'

K map of "g":

AB \ CD	00	01	11	10
00	0	0	1	1
01	1	0	1	1
11	X	X	X	X
10	1	1	X	X

F=A+B+CD'+B'C

Design decoder:


A
B
C
D
A+C
BD+A+C
a
BD
B'D'
AB
b
C'D'
c
d
e
f
g