


National University of Computer and Emerging Sciences, Lahore Campus

	Course Name:	Computer Architecture	Course Code:	EE204
	Program:	BS(Computer Science)	Semester:	Fall 2018
	Duration:	30 Minutes	Total Marks:	20
	Paper Date:	11-09-2018	Weight	~3
	Exam Type:	Quiz 1d	Page(s):	2

Student : Name: _____ **Roll No.** _____
Section: _____

Question 1 [10]

Using four bit number, multiply 5×3 using original multiplier circuit (without optimization) discussed in the class. Value of each register is initialized in the table below. List different steps that will be performed in each iteration and the resulting value of each register.

Iteration	Step	Multiplier	Multiplicand	Product
0	Initial values	0101	00000011	00000000
1				
2				
3				
4				

Question 2 [10]

Input	Present State		Next state	
e	A_i	B_i	A_{i+1}	B_{i+1}
0	0	0	1	0
0	0	1	0	1
0	1	0	1	0
0	1	1	0	1
1	0	0	0	0
1	0	1	1	1
1	1	0	0	0
1	1	1	0	0

The state table shows the transitions of a sequential circuit with two memory elements.

- Write down the Boolean expressions describing the next state.
- Draw the circuit using the expressions.