

COAL
BS CS Fall 2022
Quiz 8

Time allowed: 10 min

Total marks: 10

Roll Number: _____

Name: _____

Q#1

[7 Marks]

Design an arithmetic circuit with one selection variable S and two 4-bits data inputs A and B . the circuit generates the following four arithmetic operations in conjunction with input carry C_{in} . Draw the logic diagram for the first two stages.

S	$C_{in} = 0$	$C_{in} = 1$
0	$A+B$	$A+1$
1	$A-1$	$A-B$

Q#2

[3 Marks]

A digital computer has a common bus system with 16 register 32 bit each. Bus is designed using Multiplexers.

- i. How many selections lines are there in multiplexers: _____.
- ii. What is the size of Multiplexers _____.
- iii. How many Multiplexers are needed _____.