Bahria University
Lahore Campus

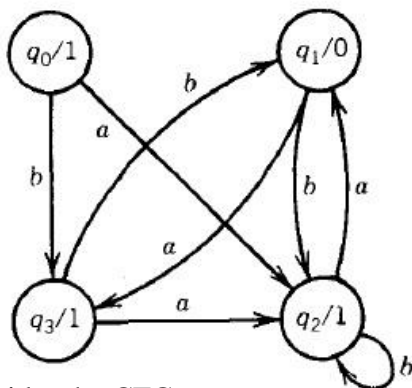## THEORY OF AUTOMATA
ASSIGNMENT # 03

Instructor Name: Mr. Tahir Iqbal
Program: BSCS 4A& 4B

Objective:
1. **To learn Mealy and Moore Machine.**
2. **CFG**

Q.1 Convert the given Moore Machine into Mealy machine.

Q.1 Consider the CFG:

    S → XaXaX
    X → aX | bX | Null

What is the language this CFG generates?

Q.2 Describe the relation of CFG with Regular Expression with the help of an example.

Q.3 Find the leftmost derivation for the word *abba* in the grammar:

    S → AA
    A → aB
    B → bB | A

Q.4 Convert the following CFG to CNF.
i) S → SS | a
ii) S→ aSa | SSa | a

Good Luck☺