

# Military College of Signals

## CS Department

### Automata Theory and Formal Languages

Spring 2011

BESE 14

#### Assignment 04 – Normal Forms

Due date: **27<sup>th</sup> May, 2011**

**Q1:** Convert the Grammar to CNF

$S \rightarrow ABa$

$A \rightarrow aab$

$B \rightarrow Ac$

**Q2:** Convert the Grammar to GNF

$S \rightarrow abSb|aa$

**Q3:** Convert the Grammar to GNF

$S \rightarrow aSb|bSa|a|b$

**Q4:** Convert the Grammar to CNF

$S \rightarrow AB|aB$

$A \rightarrow aab|\epsilon$

$B \rightarrow bbA$

(remove  $\epsilon$ -production first)