

# Foundation of Computer Science(CS60001)

## Tutorial-05

September 9, 2010

1. Construction of (singly infinite, single tape) Turing Machines :

- (a)  $a^n b^m c^p$  (Where  $n > m > p$ )
- (b) Design a *Doubling Machine* i.e input is  $n$  number of 1's followed by blank ( $\sqcup$ ) symbols and output is  $2n$  number of 1's followed by ( $\sqcup$ ) symbols.
- (c) Design a TM for Block copying i.e if i/p tape : A 1110.....B 1101110  $\sqcup \sqcup \sqcup \dots$ , then o/p tape : A 1110.....B 11101101110  $\sqcup \sqcup \sqcup \dots$