Middle East Technical University | Department of Computer Engineering

CENG 280

Formal Languages and Abstract Machines

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Homework 5

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Answer for Q1

a) G_1, is the grammar of the language that accepts strings in the form

$$w = \{0^n 1^n | 1^n 0^n, n \geq 0\}$$

b) G_1, is unambiguous because there is a single sequence,for each string accepted by the language that G_1 represents.

Answer for Q2

a) A grammar is said to be ambiguous if there exists more than one parse tree for the given input string for example "ab" has more than one parse tree.

$S \to AB \to aAB \to aB \to abB \to ab$

$S \to AB \to aB \to ab$

So G_2, is ambiguous.

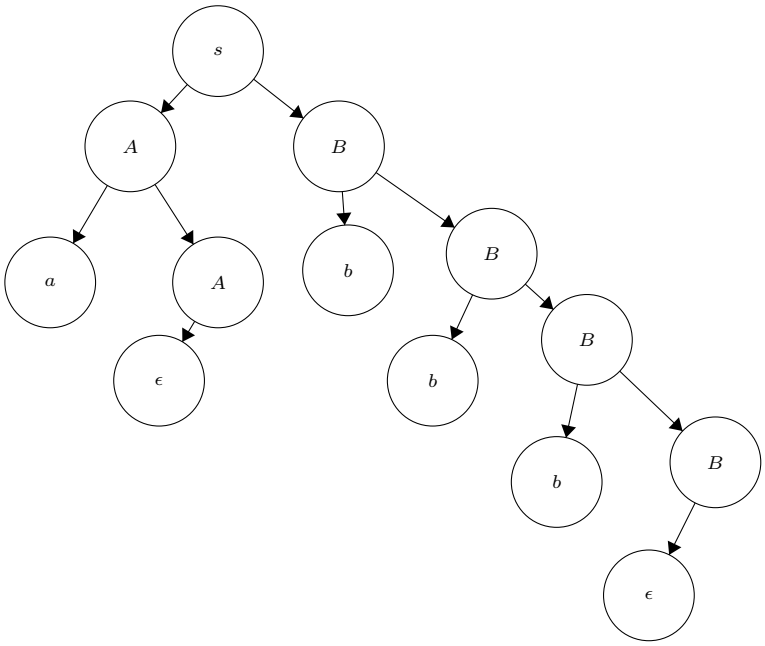
b) R':

$S \to AB$

$A \to aA \mid \epsilon$

$B \to bB \mid \epsilon$

c)



Answer for Q3

a)
i)

ii)

b)