

Karadeniz Technical University Dept. of Computer Engineering Lecturer Ömer ÇAKIR

COM2004 Automata Theory Final Exam, 28.5.2016, 15:00, D5 Duration: 100 Minutes

Rules to be Obeyed During the Exam

1. Cell r	phones are not allowed t	to be used as a calculator	or a watch. They mus	ust be switched off and	placed in the r	pocket
-----------	--------------------------	----------------------------	----------------------	-------------------------	-----------------	--------

2. Brief information about the exam will be given at the begining from lecturer, then no one is not allowed to ask a question during the exam.

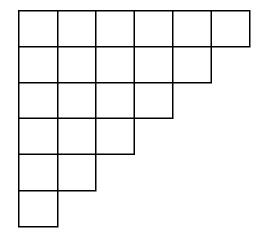
NUMBER:	NAME:	SIGNATURE:	GRADE:			

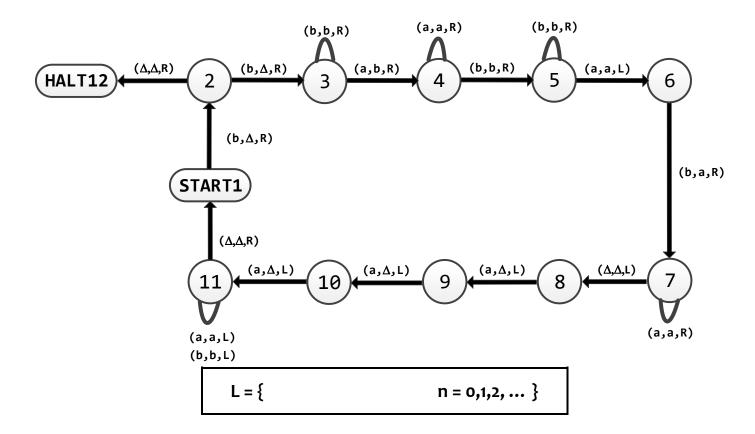
1.

$$S \rightarrow BS \mid AX \mid b$$

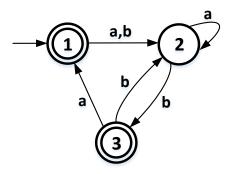
 $X \rightarrow BX \mid AS \mid a$
 $A \rightarrow a$
 $B \rightarrow b$

- a) Taking into account the CNF on the left, draw parse tree/trees for "baabbb" using CYK parsing algorithm. (20P)
- b) Draw parse trees for sub sentences of which lengths are 4 and 5.(20P)





2. Write accepted language by the TM above in the $L = \{... n=0,1,2,...\}$ format. (30P)



3. Convert **FA** to **RE** by deleting **3,2,1** states respectively. (30P)