**Faculty of Computer & Information Sciences** 

**Ain Shams University Course Code:** HUM 113

**Course Name:** Computational Linguistics

**Exam:** (MidTerm ) 16/11/2017 **Year:** (1st term) 1st undergraduate



Instructors: Dr. Dina Khattab Offering Dept: Humanities Academic year: 2017-2018 Duration: 50 Minutes Total Grade: 10 Marks

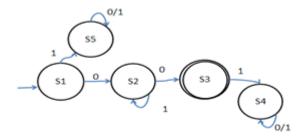
## Version (B)

Name:	Section:
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## Answer the following **Three** questions:

Question 1: Marks: 3

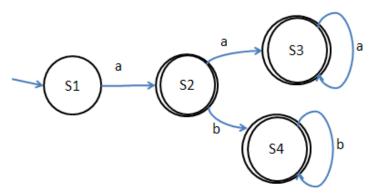
What is the language recognized by the following FSA over the alphabet  $\Sigma = \{0, 1\}$ 



The language accepted by the FSA is the set of strings of 0's and 1's which must start and end with 0

Question 2: Marks: 3

Draw a graph for FSA over the alphabet  $\Sigma = \{a, b\}$  that represents the regular expression:  $a(b^*|a^*)$ 



Question 3: Marks: 4

Given the following CFG, derive a valid sentence by drawing its parse tree.

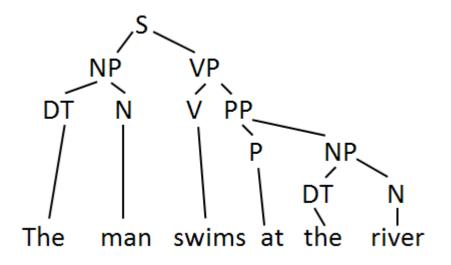
**N**: {S, NP, VP, DT, N, V, PP, P}

**S** : {S}

Σ: {man, street, river, runs, swims, the, in, at}

P:

 $S \rightarrow NP \ VP$   $NP \rightarrow Dt \ N$   $VP \rightarrow V \ PP$   $PP \rightarrow P \ NP$   $V \rightarrow runs \mid swims$   $N \rightarrow man \mid street \mid river$   $DT \rightarrow the$  $P \rightarrow in \mid at$ 



With Best Regards.

Dr. Dina Khattab

With Best Regards,

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