

DEPARTMENT OF INFORMATION TECHNOLOGY

Automata Theory

Instructor: Prof. Neha Deshmukh

*Note: Assignment must be submitted on A4 size ruled papers. Write on both sides of the paper.*

 *Write your Name, Division and Roll Number in the right top corner of first page.*

 *Write Assignment Number and Name of Concept in the center at top of first page.*

 *Do not write the Questions in your Assignment. Directly start with the solutions.*

 *Assume suitable data if necessary but state it clearly in the solution.*

 *Assignment must be submitted on or before the mentioned Date of Submission.*

**Assignment # I**

**Date of Submission: 15th February 2016**

Ex. 1: Find the shortest string that is not in the language represented by the regular expression a\*(ab)\*b\*.

Ex. 2: For the two regular expressions given below,

(a) find a string corresponding to r2 but not to r1 and

(b) find a string corresponding to both r1 and r2.

 r1 = a\* + b\* r2 = ab\* + ba\* + b\*a + (a\*b)\*

Ex.3: Find a regular expression corresponding to the language of all strings over the alphabet { a, b } that do not end with ab.

Ex.4: Find a regular expression corresponding to the language of all strings over the alphabet { a, b } that contain no more than one occurence of the string aa.

Ex.5: Find a regular expression corresponding to the language of strings of even lengths over the alphabet of { a, b }.

Ex.6: Describe as simply as possible in English the language corresponding to the regular expression a\*b(a\*ba\*b)\*a\* .

Ex.7: Describe as simply as possible in English the language corresponding to the regular expression (( a + b )3)\*(a + b ) .

Ex.8: Describe as simply as possible in English the language corresponding to the regular expression ( b + ab )\*( a + ab )\*.

Signature: 

Name of the Faculty: Prof. Neha Deshmukh