**Lenguajes Regulares**

Fuente:T.A.Sudkamp.Languages and Machines:

An IntroductiontotheTheoryofComputerScience.Pearson,3rdEdition(2005),pp.59‐61.

**4. Let X = (aa, bb) and Y = {λ, b, ab).**

**a) List the strings in the set XY.** {aa, aab, aaab, bb, bbb, bbab}

**b) How many strings of length 6 are there in X\*?**

{aaaaaa, bbbbbb, aaaabb, aabbaa, bbaaaa, aabbbb, bbbbaa, bbaabb}

**c) List the strings in the set Y\* of length three or less.**

{λ, b, ab, bb, bab, abb, bbb}

**d) List the strings in the set X\*Y\* of length four or less.**

X\* elements of legth 4 or less ={λ, aa, bb, aaaa, aabb, bbaa, bbbb}

Y\* elements of legth 4 or less={λ, b, ab, bb, bab, abb, bbb, abab, babb, bbab, abbb, bbbb}

Therefore elements of X\*Y\* of length four or less are:{λ, b, ab, bb, bab, abb, bbb, abab, babb, bbab, abbb, bbbb, aa, aabaaab, aabb, aaaa, aabb, bbaa}

**14. The set of strings over {a, b,c) in which all the a’s precede the b’s, which in turn precede the c’s. It is possible that there are no a’s, b’s, or c's.**

a^\* b^\* c^\*

**15. The same set as Exercise 14 without the null string.**

a^+ b^+ c^+

**16. The set of strings over {a, b, c} with length three:**

(a+b+c) (a+b+c) (a+b+c)

**17. The set of strings over (a, b, c} with length less than three:**

(epsilon+a+b+c) (epsilon+a+b+c)

**18. The set of strings over (a, b,c) with length greater than three.**

(a+b+c)(a+b+c)(a+b+c)(a+b+c)+

**19. The set of strings over {a, b} that contain the substring ab and have length greater than two.**

(a+b)\*a(a+b)\*b(a+b)\*