Theory of Computation

النظرية الاحتسابية
المحاضرة العاشرة

كلية التربية للعلوم الصرفة / جامعة ديالى

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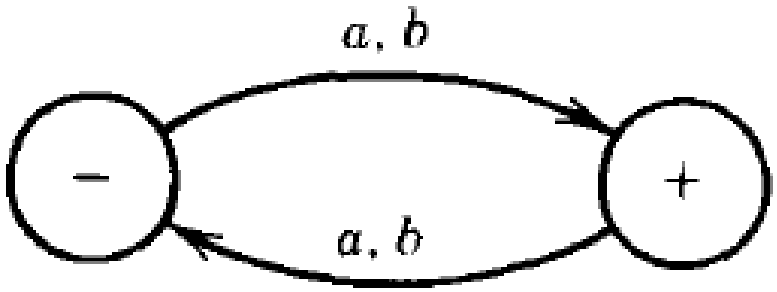
المرحلة الثانية

Q/ Describe the languages accepted by the following FA's.



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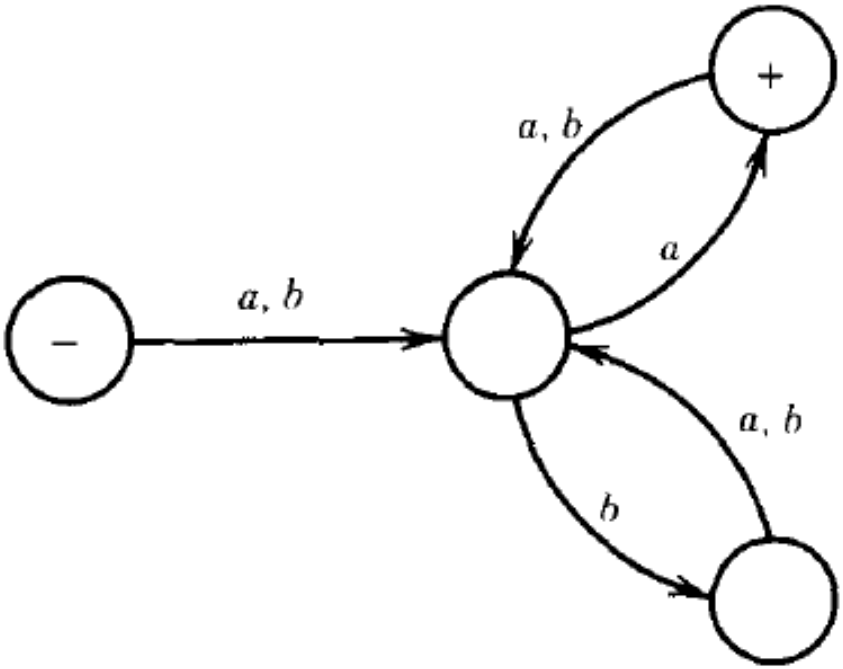

الدكتورالمهندس محمد سامي محمد

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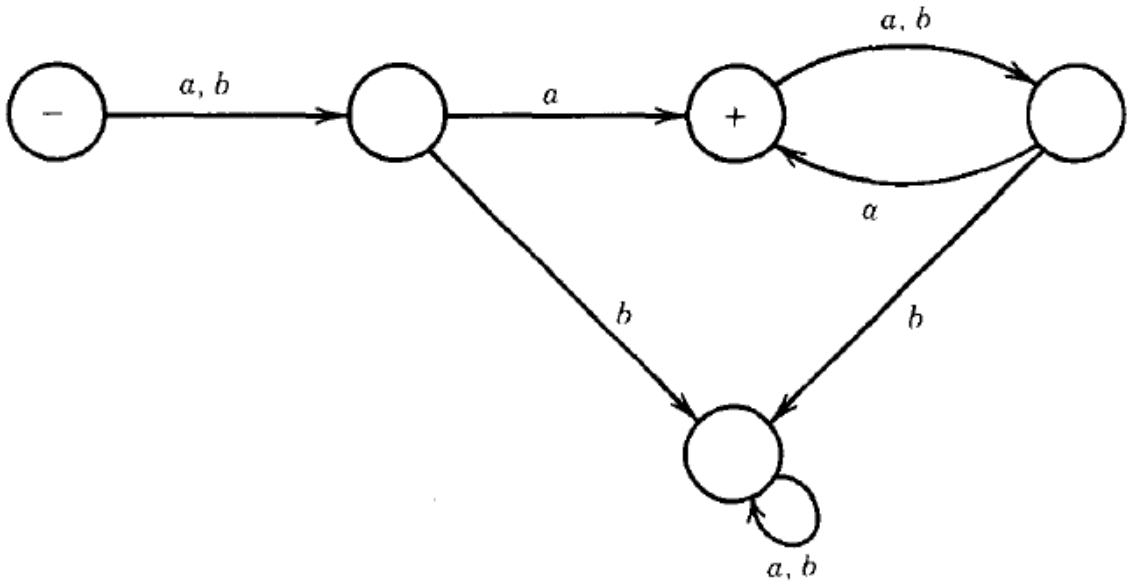

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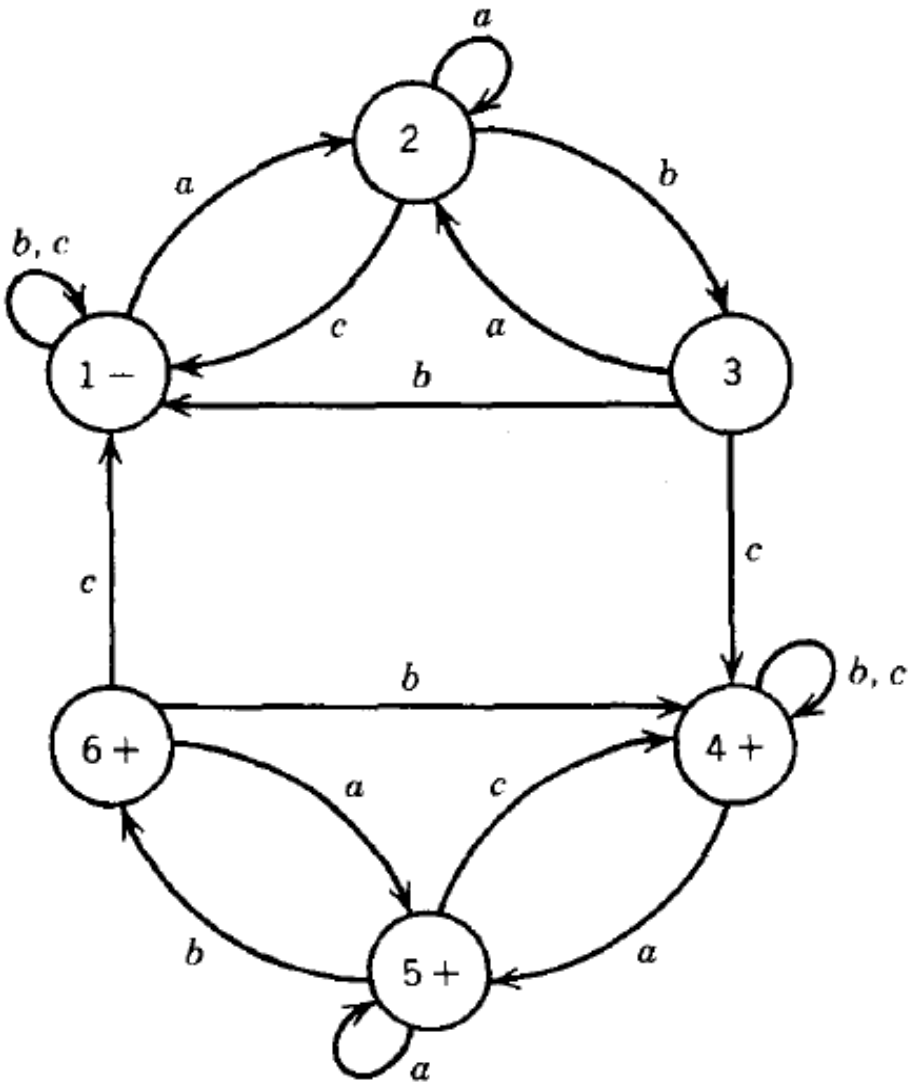
Q/ The following is an FA over the alphabet I = {a, *b*, *c*}. Prove that it accepts all strings that have an odd number of occurrences of the substring *abc*.



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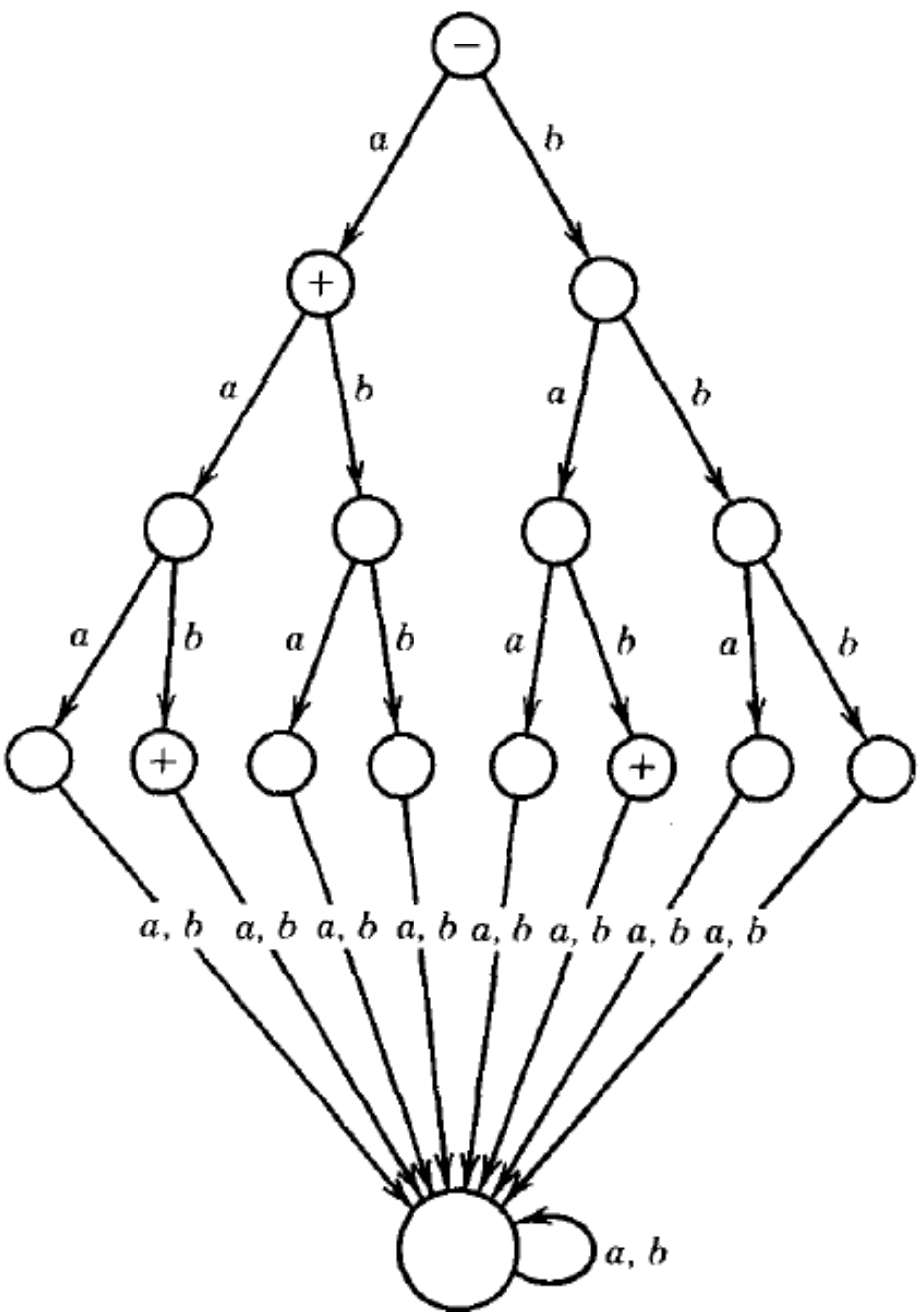
Q/ Consider the following FA:



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(i) Show that any input string with more than three letters is not accepted by this FA.
(ii) Show that the only words accepted are *a*, *aab*, and *bab*.
(iii) Show that by changing the + signs alone we can make this FA accept the language *{bb, aba, bba}*
(iv) Show that any language in which the words have fewer than four letters can be accepted by a machine that looks like this one with the + signs in different places.
(v) Prove that if L is a finite language, then there is some FA that accepts *L*.

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