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CS402 Final Exam (Fall 2009)

Time 2 Hours

Total questions 41

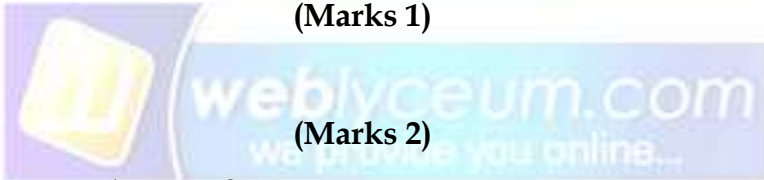
Objective questions 31

Subjective question 10

Question: 31 (Marks 1)

Can you say that string of 0's whose length is a perfect square is not regular?

Question: 32 (Marks 1)



Question: 33 (Marks 2)

Is the following an FA or TM?

Question: 34 (Marks 2)

If L is the language that accept even length strings then what strings will Lc accept?

Question: 35 (Marks 3)

Define Myhill Nerode theorem

Question: 36 (Marks 3)

If L_1, L_2 and L_3 be any three finite languages over $\Sigma = \{a,b\}$, then how will be

$(L1 \cap L2) \cup (L2 \cap L3) \neq \emptyset$

Question: 37 (Marks 3)

How you differentiate between wanted and unwanted branches while deriving a string from in the context of CFG?

Question: 38 (Marks 5)

What is the difference between concatenation and intersection of two FAs and union and addition of two FAs?

Question: 39 (Marks 5)

Use pumping lemma II to show that following language is not regular.

$L = \{a^n2 ; n = 1, 2, 3, 4, \dots\}$



Question: 40 (Marks 10)

Draw Moore Machine equivalent to the following Mealy Machine.

Question: 41 (Marks 10)

Write CFG of the following PDA. Also write the stack alphabet and tape alphabet.

