CS 302 **17 October, 2017**

QUIZ 4

Duration : 15 minutes

Do not forget to write your name on your paper !

QUESTION

Suppose that the DFAs $A = (Q_A, \Sigma, \delta_A, s_A, F_A)$ *and* $B = (Q_B, \Sigma, \delta_B, s_B, F_B)$ *accept the languages* L_A *and* L_B *respectively.*

State algorithms to ***decide :***

(a) *(4pts)* $L_A \cap L_B = \varnothing =$ *null set ;*

(b) *(4pts)* $L_A \subseteq L_B$

using the product automaton $A \times B$

(c) *(2pts) If the no. of states of* $A \times B$ *is* n, *state the complexity of your algorithms for* ***(a)*** *and* ***(b)*** *above.*