

St. Joseph's College (Autonomous), Bangalore
I Semester IA Examination, Aug 2016
M.Sc (Computer Science)
CS 7115 : Theory Of Computation

Time 1.5Hrs

Max Marks 35

PART- A

Answer any FIVE questions

7 x5 = 35

- 1) Define the following with formula and example
 - E-CLOSURE .
 - Extended transition function of an NFA
 - Kleen Plus
- 2) What is Finite Automata? What is Regular Expression?
- 3) Write a DFA to accept Strings of a's, 0's and 1's ending with a00. Process the String "a00" using Extended Transition function.
- 4) Convert the following NFA into a DFA.
- 5) Convert the following E-NFA into a DFA.
- 6) Write a DFA to accept strings of a's and b's having a substring "aa" or "bb".
- 7) Explain the meaning of the following Regular Expressions
 - a) $(a+b)^*aaa(a+b)^*$
 - b) $(123)(a+b+c)^*(12)^*$
 - c) $(a+b)^*abcd$