

JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY, WAKNAGHAT

TEST -1 EXAMINATION- FEBRUARY 2020

B.Tech. VIII & M.Tech. II Semester

COURSE CODE: 10B11CI513

MAX. MARKS: 15

COURSE NAME: Theory of Computation

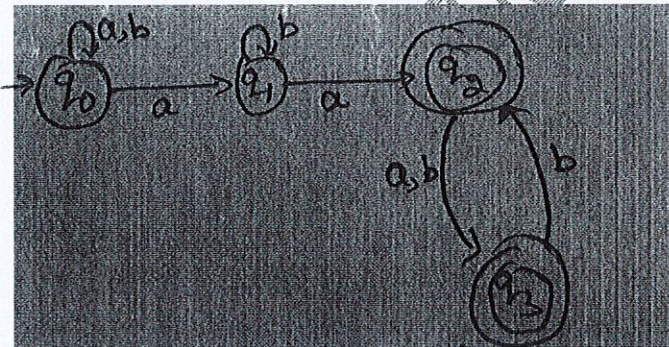
COURSE CREDITS: 03

MAX. TIME: One Hour

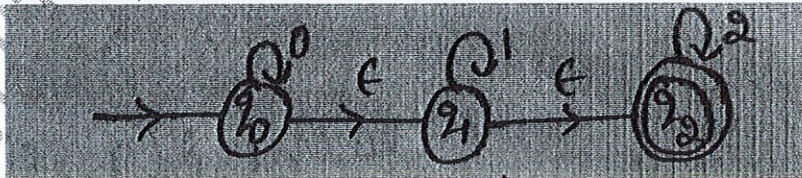
Note: All questions are compulsory. Carrying of mobile phone during examinations will be treated as case of unfair means.

1. a) What is TOC? Explain different types of machines and their corresponding languages?
[1.5+1.5+2=5 MARKS]
- b) What is a finite automaton? Construct a DFA which accepts all the strings over {a,b} that starts with 'a'?
- c) Construct a DFA that accepts all those strings which has 3 continuous 1 as a substring?

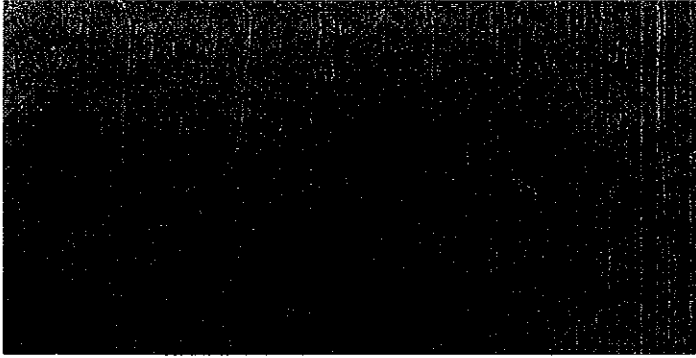
2. a) Convert the following NFA into DFA? [2+3=5 MARKS]



- b) Convert the below graph into NFA without epsilon from NFA with epsilon?



3. a) Differentiate between mealy and moore machine? Convert the following diagram from mealy machine to moore machine? [3+2=5 MARKS]



b) Explain the difference between finite automata and push down automata? Explain each tuple of finite automata and push down automata in detail?

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