M.Sc. DEGREE EXAMINATION,NOVEMBER 2019
I Year I Semester
Theory of Computation

Time : 3 Hours **Max.marks :75**

Section A $(10 \times 2 = 20)$ Marks

Answer any **TEN** questions

1. What is Automata?
2. Differentiate between DFA and NFA
3. What is Regular Expression?
4. What is Languages in theory of computation?
5. What is CFG?
6. Define : Parse Tree
7. What do you mean by Context Free Languages?
8. Define :Turing Machines
9. What is Recursively Enumerable?
10. Give the meaning for Undecidable Problems in theory of computation.
11. Define : Inductive Proof
12. Define : Pushdown Automata

Section B $(5 \times 5 = 25)$ Marks

Answer any **FIVE** questions

13. Explain the Finite Automata with Epsilon Transitions with example
14. List out the Closure Properties of Regular Languages
15. Explain about Deterministic Push Down Automate.
16. Explain about the Pumping Lemma for CFL
17. What is Post's Correspondence Problem? Explain.
18. Explain about Chomsky Normal Forms.
19. What is an ambiguous grammar in CFG? Explain.

Section C $(3 \times 10 = 30)$ Marks

Answer any **THREE** questions

20. Explain and Convert the following NFA to DFA :

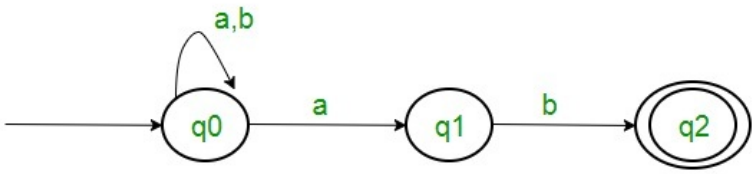
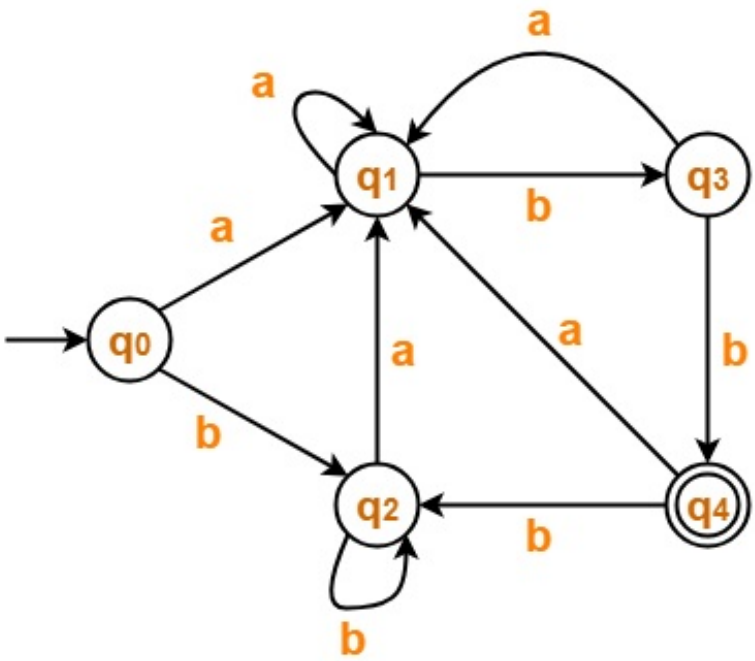


Figure 1

21. How will you minimize the following DFA with explanation.



22. Explain about Push Down Automata with example.
23. What are the various programming techniques forTuring Machine? Explain
24. Explain : The Classes P and NP

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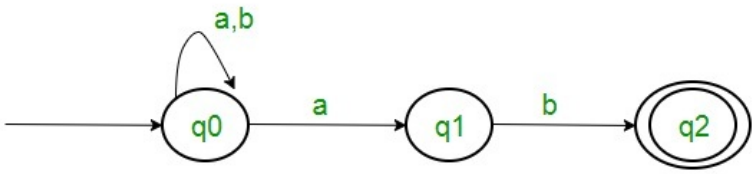

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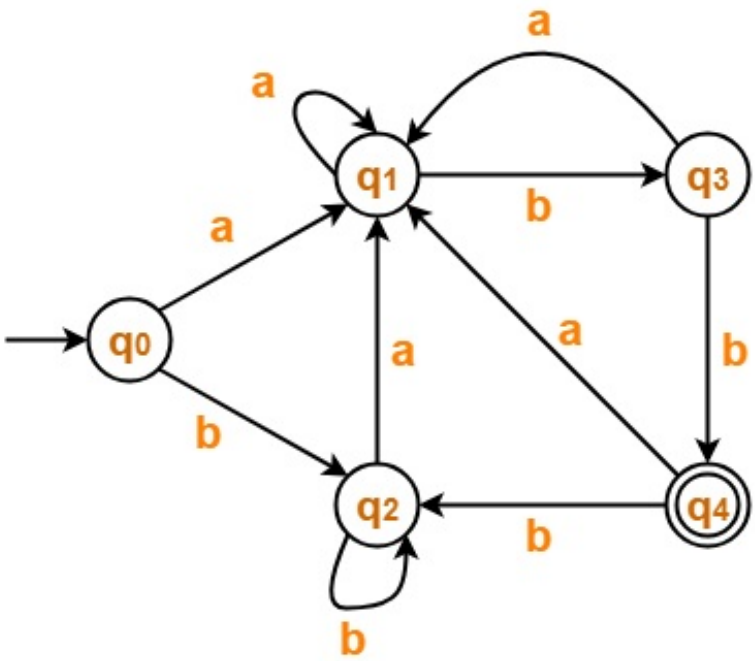

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