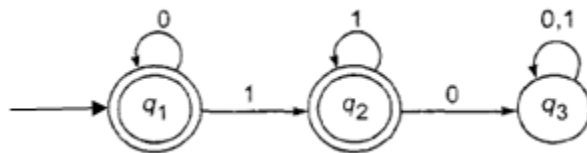


Dr. Shyama Prasad Mukherjee University, Ranchi
Master of Computer Applications
Model Questions

Semester - II
 Subject - Automata Theory (CCMCA204)

1. (a) What is Non deterministic finite Automata? Explain.
 (b) Construct Finite Automata that accepts set of all strings with prefix 'ab' over $\Sigma = \{a, b\}$.
2. (a) Construct a DFA which accepts set of all string containing even number of 0's and even number of 1's. Also draw its transition table.
 (b) Explain post's correspondence problem.
3. Define Regular Expression. Find Regular Expression of the following transition diagram:



4. What is Mealy Machine? Convert following Mealy Machine to Moore Machine.

Present State	Next state			
	Input a=0		Input a=1	
	State	Output	State	Output
->q ₁	q ₃	0	q ₂	0
q ₂	q ₁	1	q ₄	0
q ₃	q ₂	1	q ₁	1
q ₄	q ₄	1	q ₃	0

5. (a) Explain Derivation tree.
(b) What do you understand by Ambiguity in Grammar? Explain with help of an example.
6. (a) What is pushdown Automata? What do you mean by ID of PDA?
(b) Design PDA for $L = \{a^n b^n : n \geq 1\}$
7. What is Chomsky classification of Grammar? Explain with example.
8. Explain Turing machine. Design Turing machine for $L = \{0^n 1^n 2^n : n \geq 1\}$