

## SHORT ANSWERS

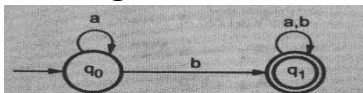
1. what is finite state automata?
2. What is transition diagram?
3. Define Regular Set? Give example
4. How to represent Regular Grammar?
5. What is ambiguity? Give an example?
6. What is alphabet, string, language?
7. what is transition table?
8. Differentiate between DFA and NFA?
9. Describe Regular Expression for the language, it contains 110 as substring
10. What is Derivation tree?
11. Define Non-deterministic finite automata?
12. Define Right Linear Grammar? Give example
13. What is Regular Expression?
14. Define Context free grammar?

## LONG ANSWER QUESTIONS

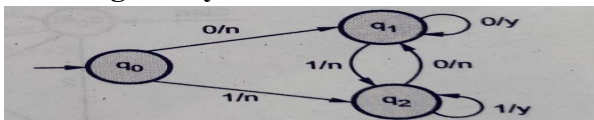
1. Define Finite automata. To find 5 tuple's & Graph for your own example?
2. Convert the given NFA to equivalent DFA.

$\delta$	0	1
$\rightarrow p$	{p, q}	{p}
q	$\emptyset$	{r}
*r	{p, r}	{q}

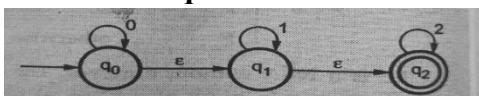
3. Explain Algebraic laws for Regular expressions
4. Explain about Right Linear Grammar and Left Linear grammar. Convert the following finite automata into Right Linear grammar and Left Linear grammar



5. Define CFG? Explain about minimization of CFG with example.
6. Define Derivation? Explain Types of Derivations with examples.
7. Explain Myhill-Nerod Theorem with an example.
8. Construct an NFA for the Regular Expression  $(0+1)^* (00+11)$
9. State Pumping Lemma for Regular Languages and prove that the following language  $L = \{a^n b^n / \text{where } n > 0\}$  are not Regular by using pumping lemma.
10. Explain Ambiguity with suitable examples
11. Explain about Moore and Melay machines. Write any three differences. Convert the following Melay machine to Moore machine.



12. Find an equivalent NFA without  $\epsilon$ -transitions for the NFA- $\epsilon$  given below



13. Find the Regular Expression corresponding to the following DFA



