# Chapter 2: Lexical Analysis

1. What are translation rules in LEX? Explain it with example.
2. What is the role of input buffering in lexical analyzer? Explain with Sentinels
3. Define regular definitions. Describe the transition diagram for relation operators, identifiers & keywords in details.
4. Give three general approaches to the implementation of a lexical analyzer. Why buffering techniques are used? Explain any one buffering technique with suitable example.
5. For what we use subset construction algorithm? Write & explain in detail the same.
6. Give operations on NFA states. Give algorithm for computation of $\varepsilon$-closure & obtain $\varepsilon$-closure of state 0, 6 given in following diagram.
7. Define DFA with example. Explain algorithm for simulation of DFA.
8. Compare between regular expression & CFG.
9. Enumerate different issues in designing the lexical analyzer generator & explain how they are resolved.
10. Discuss about the design of lexical analyzer generator.
11. Describe Lex as tool for constructing lexical analyzer.
12. Distinguish the following term & illustrate with suitable example
    a. Lexemes
    b. Sentinels
13. Describe the transition diagram in lexical analyzer with suitable example.
14. Explain the role of lexical analyzer.
15. How the tokens are recognized in lexical analyzer? Explain with identifier & keyword example.
16. What is lexical analysis? How tokens are specified & recognized?
17. Explain the term with the help of suitable example:
    a. Tokens
    b. Patterns
18. Convert following NFA into its equivalent DFA. Show the transition table.

19. Explain the token recognition in lexical analyzer with example of transition diagram for unsigned numbers.
20. Explain lexical analyzer & lexical errors.
21. Explain finite automata in lexical analyzer.
22. Explain input buffering technique in detail.
23. Explain recognition of token in detail with example.