

TOC QUESTIONS: (savitha)

1. Which of the following CFG's can't be simulated by an FSA?

- A. $S \rightarrow Sa \mid b$
- B. $S \rightarrow aSb \mid ab$
- C. $S \rightarrow abX, X \rightarrow cY, Y \rightarrow d \mid aX$
- D. None of these

Answer: b

2. In the following grammar :

$x ::= x \oplus y \mid 4$
 $y ::= z * y \mid 2$
 $z ::= id$

which of the following is true ?

- A. \oplus is left associative while $*$ is right associative
- B. Both \oplus and $*$ are left associative
- C. \oplus is right associative while $*$ is left associative
- D. None of these

Answer: a

3. The productions

$E \rightarrow E + E$
 $E \rightarrow E - E$
 $E \rightarrow E * E$
 $E \rightarrow E / E$
 $E \rightarrow id$

- A. generate an inherently ambiguous language
- B. generate an ambiguous language but not inherently so
- C. are unambiguous
- D. can generate all possible fixed length valid computation for carrying out addition, subtraction, multiplication and division, which can be expressed in one expression

Answer: b

4. Basic limitation of FSA is that it

- A. cannot remember arbitrary large amount of information
- B. sometimes fails to recognize grammars that are regular
- C. sometimes recognizes grammars are not regular
- D. None of these

Answer: a

5. Which of the following is not possible algorithmically ?

- A. Regular grammar to context free grammar
- B. Non-deterministic FSA to deterministic FSA
- C. Non-deterministic PDA to deterministic PDA
- D. None of these

Answer: c

6. Pumping lemma is generally used for proving that

- A. given grammar is regular
- B. given grammar is not regular
- C. whether two given regular expressions are equivalent or not
- D. None of these

Answer: b

7. Set of regular languages over a given alphabet set is closed under

- A. union
- B. complementation
- C. intersection
- D. All of these

Answer: d

8. What can be said about a regular language L over {a} whose minimal finite state automation has two states?

- A. L must be $\{a^n \mid n \text{ is odd}\}$

B. L must be $\{a^n \mid n \text{ is even}\}$

C. L must be $\{a^n \mid n > 0\}$

D. Either L must be $\{a^n \mid n \text{ is odd}\}$, or L must be $\{a^n \mid n \text{ is even}\}$

Answer: b

9. CFG can be recognized by a

A. push-down automata

B. linear automata

C. both (a) and (b)

D. none of these

Answer: a

10. A given grammar is called ambiguous if

A. two or more productions have the same non-terminal on the left hand side

B. a derivation tree has more than one associated sentence

C. there is a sentence with more than one derivation tree corresponding to it

D. brackets are not present in the grammar

Answer: c

11. The logic of pumping lemma is a good example of

A. pigeon-hole principle

B. divide-and-conquer technique

C. recursion

D. iteration

Answer: a

12. Given a grammar G a production of G with a dot at some position of the right side is called

A. LR (0) item of G

B. LR (1) item of G

C. both (a) and (b)

D. none of these

Answer: a

13.If L be set of strings from alphabet, then kleen closure of L is given as

A. $L^+ = \bigcup_{i=0}^{\infty} L^i$

B. $L_0 = \bigcup_{i=0}^{\infty} L^i$

C. $L^* = \bigcup_{i=0}^{\infty} L^i$

D. $L^+ = \bigcup_{i=1}^{\infty} L^i$

Answer: b

14.Grammers that can be translated to DFA's

- A. left linear grammar
- B. Right linear grammar
- C. generic grammar
- D. All of these

Answer: b

15.Recursive descent parsers are the type of:

- A. LL parsers
- B. LR parsers
- C. LALR parsers
- D. SLR parsers

Answer: a