COMPILER DESIGN

SOLUTIONS

1. The advantage of panic mode of error recovery is that

(a) it is simple to implement
(b) it is very effective
(c) it never gets into infinite loop
(d) none of the above

Solution: Option (a) & (c)

2. A grammar can have

(a) a non-terminal A that can't derive any string of terminals
(b) a non-terminal A that can be present in any sequential form
(c) all of the above
(d) none of the above

Solution: Option (c)

3. Consider the grammar

S → ABSc|ABc
BA → AB
Bb → bb
Ab → ab
Aa → aa

Which of the following sentences can be derived by this grammar?

(a) abc
(b) aab
(c) abca
(d) abbc

Solution: Option (a)

4. The language generated by the above grammar is the set of all strings, made up of a, b, c such that

(a) the number of a's, b's and c's will be equal

(b) a's always precedes b's
(c) b's always precedes c's
(d) the number of a's, b's and c's are the same and, the a's precede the b's, which precede the c's

Solution: Option (d)

5. Choose the correct answer.

FORTRAN is a

(a) regular language
(b) context-free language
(c) context-sensitive language
(d) Turning language

Solution: Option (b)

6. Error repair may

(a) increase the number of errors
(b) generate spurious error messages
(c) mask subsequent errors
(d) all of the above

Solution: Option (d)

7. Any transcription error can be repaired by

(a) insertion alone
(b) deletion alone
(c) insertion and deletion alone
(d) replacement alone

Solution: Option (c)

8. The technique of replacing run time computation by compile time computation is called

(a) constant folding
(b) code hoisting
(c) peep hole optimization
(d) invariant computation

Solution: Option (a)

9. The graph that shows the basic blocks and their successor relationship is called

(a) control graph
(b) flow graph
(c) DAG
(d) hamiltonian graph

Solution: Option (b)

10. Which of the following optimization techniques are typically applied on loops?

(a) Removal of invariant computation
(b) Elimination of induction variables
(c) Peephole optimization
(d) Constant folding

Solution: Option (a) & (b)

11. A bottom-up parser generates

(a) Left-most derivation
(b) right-most derivation
(c) right-most derivation in reverse
(d) left-most derivation in reverse

Solution: Option (c)

12. In an incompletely specified automata

(a) no edge should be labeled ε
(b) from any given state, there can't be any token leading to two different states
(c) some states have no transition on some tokens
(d) START state may not be there

Solution: Option (c)

13. Choose the correct statement

(a) Language corresponding to a given grammar, is the set of all strings that can be generated by the given grammar

(b) A given language is ambiguous if no unambiguous grammar exists for it

(c) Two different grammars may generate the same language

(d) All of the above

Solution: Option (d)

14. Synthesized attribute can easily be simulated by an

(a) LL grammar
(b) ambiguous grammar
(c) LR grammar
(d) none of the above

Solution: Option (c)

15. The graph depicting the inter-dependencies of the attributes of different nodes in a parse tree is called a

(a) flow graph
(b) dependency graph
(c) karnaugh's graph
(d) Steffi graph

Solution: Option (b)

16. Reduction in strength means

(a) replacing run time computation by compile time computation
(b) removing loop invariant computation
(c) removing common sub-expressions
(d) replacing a costly operation by a relatively cheaper one

Solution: Option (d)

17. Which of the following comments about peep-hole optimization are True?

(a) It is applied to a small part of the code
(b) It can be used to optimize intermediate code
(c) It can be applied to a portion of the code that is not contiguous
(d) All of the above

Solution: Option (d)

18. Ud-chaining is useful for

(a) determining whether a particular definition is used anywhere or not
(b) constant folding

(c) checking whether a variable is used, without prior assignment
(d) all of the above

Solution: Option (d)

19. Which of the following symbol table implementations is best suited if access time is to minimum?

(a) Linear list
(b) Search table
(c) Hash table
(d) Self-organization list

Solution: Option (d)