

## COMPILER DESIGN

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

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

3. Consider the grammar

$S \rightarrow ABSc|ABc$

$BA \rightarrow AB$

$Bb \rightarrow bb$

$Ab \rightarrow ab$

$Aa \rightarrow aa$

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

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

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

5. Choose the correct answer.

FORTRAN is a

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

6. Error repair may

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

7. Any transcription error can be repaired by

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

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

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

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

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

**12. In an incompletely specified automata**

- (a) no edge should be labeled  $\epsilon$
- (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

**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

**14. Synthesized attribute can easily be simulated by an**

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

**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

**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

**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

**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

**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