

COMPILER DESIGN

1. A given grammar is said to be 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) parenthesis are not present in the grammar

2. The main difference between a DFSA and NDFSA is

- (a) in DFSA, ϵ transition may be present
- (b) in NDFSA, ϵ transitions may be present
- (c) in DFSA, from any given state, there can't be any alphabet leading to two different states
- (d) in NDFSA, from any given state, there can't be any alphabet leading to two different states.

3. Choose the correct statements.

- (a) Topological sort can be used to obtain an evaluation order of a dependency graph
- (b) Evaluation order for a dependency graph dictates the order in which the semantic rules are done
- (c) code generation depends on the order in which the semantic actions are performed
- (d) only (a) and (c) are correct

4. A syntax tree

- (a) is another name for a parse tree
- (b) is a condensed form of parse tree
- (c) should not have keywords as leaves
- (d) none of the above

5. Two finished state machines are said to be equivalent if they

- (a) have the same number of states
- (b) have the same number of edge
- (c) have the same number of states and edges
- (d) recognize the same set of tokens

6. For which of the following situations, inherited attribute is a natural choice?

- (a) Evaluation of arithmetic expression
- (b) Keeping track of variable declaration
- (c) Checking for the correct use of L-values and R-values
- (d) All of the above

7. If two finite state machines M and N are isomorphic then M can be transformed to N by re-labeling

- (a) the states alone
- (b) the edges alone
- (c) both the states and edges
- (d) none of the above

8. In a syntax directed translation scheme, if the value of an attribute of a node is a function of the values of the attributes of its children, then it is called a

- (a) synthesized attribute
- (b) inherited attribute
- (c) canonical attribute
- (d) none of the above

9. Which of the following is not an intermediate code form?

- (a) Postfix notation
- (b) Syntax trees
- (c) Three address codes
- (d) Quadruples

10. The best way to compare the different implementations of a symbol table is to compare the time required to

- (a) add a new name
- (b) make an inquiry
- (c) add a new name and make inquiry
- (d) none of the above

11. Which of the following symbol table implementations makes efficient use of memory?

- (a) List
- (b) Search tree
- (c) Hash tree
- (d) Self-organizing list

12. Syntax directed translation scheme is desirable because

- (a) it is based on the syntax
- (b) its description is independent of any implementation
- (c) it is easy to modify
- (d) only (a) and (c) are correct

13. Three address code involves

- (a) exactly 3 addresses
- (b) at the most 3 addresses
- (c) no unary operator
- (d) none of the above

14. An ideal compiler should

- (a) detect errors
- (b) detect and report errors
- (c) detect, report and correct errors
- (d) none of the above

15. Access time of the symbol table will be logarithmic, if it is implemented by a

- (a) linear list
- (b) search tree
- (c) hash table
- (d) none of the above

16. Which of the following is not a source of errors?

- (a) Faulty design specification
- (b) Faulty algorithm
- (c) Compiler themselves
- (d) None of the above

17. Three address codes can be implemented by

- (a) indirect triples
- (b) direct triples
- (c) quadruples
- (d) none of the above

18. Symbol table can be used for

- (a) checking type compatibility
- (c) storage allocation

- (b) suppressing duplicate error messages
- (d) all of the above

19. Which of the following symbol table implementations is based on the property of locality of reference?

- (a) Linear list
- (c) Hash table

- (b) Search tree
- (d) Self-organization list

20. Hamming distance is a

- (a) theoretical way of measuring errors
- (b) technique for assigning codes to a set of items known to occur with a given probability
- (c) technique for optimizing the intermediate code
- (d) none of the above