

COMPILER DESIGN

1. For which of the following reasons, a compiler is preferable to an interpreter?

- (a) It can generate stand-alone programs that often take less time for execution
- (b) It is much helpful in the initial stages of program development
- (c) Debugging can be faster and easier
- (d) It needs less computer resources

2. In a context-free grammar

- (a) ϵ can't be the right-hand side of any production
- (b) terminal symbols can't be present in the left-hand side of any production
- (c) the number of grammar symbols in the left-hand side is not greater than the number of grammar symbols in the right-hand side
- (d) all of the above

3. The cost of developing a compiler is proportional to the

- (a) complexity of the source language
- (b) complexity of the architecture of the target machine
- (c) flexibility of the available instruction set
- (d) all of the above

4. An optimizing compiler

- (a) is optimized to occupy less space
- (b) is optimized to take less time for execution
- (c) optimizes the code
- (d) none of the above

5. Which of the following grammars are not phase-structured?

- (a) regular
- (b) context-free

(c) context-sensitive

(d) none of the above

6. Cross-compiler is a compiler

- (a) which is written in a language that is different from the source language
- (b) that generates object code for its last machine
- (c) which is written in a language that is same as the source language
- (d) that runs on one machine but produces object code for another machine

7. For which of the following reasons, an interpreter is preferred to a compiler?

- (a) It takes less time to execute
- (b) It is much helpful in the initial stages of program development
- (c) Debugging can be faster and easier
- (d) It needs less computer resources

8. If w is a string of terminal and A, B are two non-terminals, then which of the following are right-linear grammars?

- (a) $A \rightarrow Bw$
- (b) $A \rightarrow Bw|w$
- (c) $A \rightarrow wB|w$
- (d) None of the above

9. CSG can be recognized by

- (a) push-down automata
- (b) 2-way linear bounded automata
- (c) finite state automata
- (d) none of the above

10. A top-down parser generates

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

11. Which of the following is the most general phase-structured grammar?

- (a) regular
- (b) context-free

(c) context-sensitive

(d) none of the above

12. An ideal compiler should

(a) be smaller in size

(b) be written in a high level language

(c) produce object code that is smaller in size and executes faster

(d) all of the above

13. Whether a given pattern constitutes a token or not

(a) depends on the source language

(b) depends on the target language

(c) depends on the compiler

(d) none of the above comment is true

14. In a compiler, grouping of characters into tokens is done by the

(a) scanner

(b) parser

(c) code generator

(d) code optimizer

15. A grammar will be meaningless of the

(a) terminal set and non-terminal set are not disjoint

(b) left hand side of a productions is a single terminal

(c) left hand side of a production has no non-terminal

(d) all of the above

16. Incremental-compiler is a compiler

(a) which is written in a language that is different from the source language

(b) that generates object code for its host machine

(c) which is written in a language that is same as the source language

(d) that allows a modified position of a program to be compiled

17. In a context-sensitive grammar,

- (a) ϵ can't be the right-hand side of any production
- (b) number of grammar symbols on the left-hand side of a production can't be greater than the number of non-terminals on the right-hand side
- (c) number of grammar symbols on the left-hand side of a production can't be greater than the number of grammar symbols on the right-hand side
- (d) all of the above

18. If a is a terminal and S, A, B are three non-terminals, then which of the following are regular grammars?

- (a) $S \rightarrow \epsilon, A \rightarrow aS|b$
- (b) $A \rightarrow aB|a, B \rightarrow bA|b$
- (c) $A \rightarrow Ba|Bab$
- (d) $A \rightarrow abB|aB$

19. Choose the correct statements:

- (a) Sentence of a grammar is a sequential form without any terminals
- (b) Sentence of a grammar should be derivable from the start state
- (c) Sentence of a grammar should be frontier of a derivation tree, in which the root node has the start state as the label
- (d) (a) above is incorrect

20. Representing the syntax by a grammar is advantageous because

- (a) it is concise
- (b) it is accurate
- (c) automation becomes easy
- (d) all of the above

21. CFG can be recognized by a

- (a) push-down automata
- (b) finite state automata
- (c) 2-way linear bounded automata
- (d) statement (b) incorrect