

12. Irregularities in a language may be the result of maintaining backward compatibility with a prior version of the language.

ANS: T PTS: 1 REF: 33

13. Java is considered to be a semantically safe language.

ANS: T PTS: 1 REF: 33

14. A language that adds new features via additional releases is considered to be extensible.

ANS: T PTS: 1 REF: 34

15. Macros can be used to improve the readability of a language.

ANS: T PTS: 1 REF: 34-35

16. C was chosen as the base language for C++ because it contained class constructs.

ANS: F PTS: 1 REF: 35-36

17. One of the design goals of C++ was that it would be highly portable.

ANS: T PTS: 1 REF: 36

18. C++ was not intended to undergo incremental development.

ANS: F PTS: 1 REF: 36

19. C++ was designed to be a multiparadigm language that would not enforce any one style of programming.

ANS: T PTS: 1 REF: 36

20. C++ is an open source language that has never had a commercial release.

ANS: F PTS: 1 REF: 37

21. C++ does not have a formal language definition.

ANS: F PTS: 1 REF: 37

22. Python was designed to bridge the gap between a systems language like C and a shell language like Perl.

ANS: T PTS: 1 REF: 38

23. Python is type-checked at runtime.

ANS: T PTS: 1 REF: 40

24. When no type errors are caught during execution, we can infer that they do not exist.

ANS: F PTS: 1 REF: 40

25. A program written in Python will require many more lines of code than if it were written in C++.

ANS: F

PTS: 1

REF: 40

MULTIPLE CHOICE

1. The quality of a language that allows a programmer to express a computation clearly, correctly, concisely, and quickly is called ____.

- a. efficiency
- b. regularity
- c. orthogonality
- d. writability

ANS: D

PTS: 1

REF: 27

2. Which of the following is a functional language?

- a. Lisp
- b. ALGOL
- c. Python
- d. FORTRAN

ANS: A

PTS: 1

REF: 28

3. Which of the following is an object-oriented language?

- a. C++
- b. C
- c. FORTRAN
- d. Algol

ANS: A

PTS: 1

REF: 28

4. Attempts to make programming languages more reliable led to the development of ____.

- a. better documentation
- b. strong data typing
- c. improved writability
- d. increased efficiency

ANS: B

PTS: 1

REF: 28

5. A programming language's expressiveness ____.

- a. refers to how easy it is to express complex processes
- b. refers to the efficiency of the code
- c. refers to how well its features are integrated
- d. refers to its level of generality

ANS: A

PTS: 1

REF: 29

6. A language achieves ____ by avoiding special cases in the use of constructs.

- a. orthogonality
- b. efficiency
- c. generality
- d. uniformity

ANS: C

PTS: 1

REF: 30

7. A language is said to have the property of ____ if its constructs can be combined in any meaningful way, with no unexpected restrictions.

- a. generality
- b. orthogonality
- c. uniformity
- d. efficiency

ANS: B

PTS: 1

REF: 31

8. A language is said to have the property of ____ if it has a design in which similar things look similar, and different things look different.

- a. generality
- b. uniformity
- c. orthogonality
- d. efficiency

ANS: B PTS: 1 REF: 31

9. The fact that Pascal does not allow functions and procedures to be assigned to variables indicates a lack of ____ in the language.

- a. uniformity
- b. generality
- c. orthogonality
- d. efficiency

ANS: B PTS: 1 REF: 31

10. The fact that C does not allow array types to be the return value of a function indicates a lack of ____ in the language.

- a. generality
- b. uniformity
- c. orthogonality
- d. efficiency

ANS: C PTS: 1 REF: 31

11. Which of the following is an example of lack of generality in a language?

- a. In C, arrays cannot be directly compared using the == operator.
- b. In Pascal, functions can return only scalar or pointer types as values.
- c. In C, local variables can only be defined at the beginning of a block.
- d. In Pascal, return statements in functions look like assignments to variables.

ANS: A PTS: 1 REF: 31

12. Because C++ requires a semicolon after a class definition but not after a function definition, C++ is said to lack ____.

- a. orthogonality
- b. security
- c. reliability
- d. uniformity

ANS: D PTS: 1 REF: 32

13. The irregularities of primitive types and reference types in Java is the result of the designer's concern with ____.

- a. efficiency
- b. orthogonality
- c. regularity
- d. generality

ANS: A PTS: 1 REF: 33

14. Which of the following is most closely related to reliability?

- a. Generality
- b. Regularity
- c. Security
- d. Uniformity

ANS: C PTS: 1 REF: 33

15. A language which prevents a programmer from compiling or executing any statements or expressions that violate the definition of the language is said to be ____.

- a. efficient
- b. uniform
- c. semantically safe
- d. orthogonal

ANS: C PTS: 1 REF: 33-34

16. A language that allows the user to add features to it is said to have the property of ____.

- a. uniformity
- c. extensibility

ANS: C PTS: 1 REF: 34

17. A ____ specifies the syntax of a piece of code that expands to other standard code.
- | | |
|-------------|--------------|
| a. compiler | c. function |
| b. macro | d. procedure |

ANS: B PTS: 1 REF: 34

18. The first implementation of C++ used ____.
- a. a compiler named Cfront
 - b. a preprocessor named Cfront
 - c. an interpreter named Cfront
 - d. a compiler named Cpre

ANS: A PTS: 1 REF: 36

19. C++ ____.
- a. is an object-oriented language
 - b. is a functional type language
 - c. does not have an accepted set of standards
 - d. is not widely used

ANS: A PTS: 1 REF: 37

20. Python was originally designed for ____.
- a. scientists and engineers and other non-programmers
 - b. expert programmers
 - c. large scale systems
 - d. time-critical systems

ANS: A PTS: 1 REF: 38

21. Which of the following properties is least exhibited by Python?
- | | |
|----------------|------------------|
| a. simplicity | c. extensibility |
| b. portability | d. efficiency |

ANS: D PTS: 1 REF: 38-39

22. All of the following languages are statically typed except ____.
- | | |
|--------|-----------|
| a. Ada | c. C++ |
| b. C | d. Python |

ANS: D PTS: 1 REF: 39

23. Of the following languages, which is a statically typed language?
- a. Python
 - b. Lisp
 - c. Smalltalk
 - d. Ada

ANS: D PTS: 1 REF: 39

24. Python is easy for nonprogrammers to learn and use because ____.
- a. it is based on a small but powerful set of primitive operations and data types that can be easily extended
 - b. it has a very rich set of data types
 - c. it is highly portable to multiple platforms
 - d. it does not support advanced abstractions

ANS: A

PTS: 1

REF: 38

25. The real benefit of deferring type checking until runtime is ____.
- a. greater runtime efficiency
 - b. greater programmer efficiency
 - c. higher program reliability
 - d. higher program safety

ANS: B

PTS: 1

REF: 40