

Part A: Multiple Choice Questions (20)

1. A subprogram that returns a value is called a:

- A) Procedure
- B) Function
- C) Module
- D) Package

Answer: B) Function

2. Which parameter passing method passes a copy of the actual parameter?

- A) Pass-by-reference
- B) Pass-by-name
- C) Pass-by-value
- D) Pass-by-result

Answer: C) Pass-by-value

3. In pass-by-reference, the formal parameter:

- A) Receives a copy of the value
- B) Refers to the same memory location as the actual parameter
- C) Cannot be modified
- D) Is dynamically allocated

Answer: B) Refers to the same memory location as the actual parameter

4. The collection of all visible variables in a subprogram is called:

- A) Scope chain
- B) Referencing environment
- C) Symbol table
- D) Namespace

Answer: B) Referencing environment

5. A closure consists of:

- A) Function code only
- B) Variables only
- C) Function and referencing environment
- D) Stack and heap

Answer: C) Function and referencing environment

6. Which feature allows multiple subprograms to have the same name but different parameter lists?

- A) Recursion
- B) Genericity
- C) Overloading
- D) Encapsulation

Answer: C) Overloading

7. A generic subprogram:

- A) Has no parameters
- B) Works with different data types
- C) Cannot return values
- D) Uses dynamic scoping

Answer: B) Works with different data types

8. Calling a subprogram through a pointer is known as:

- A) Direct call
- B) Static call
- C) Recursive call
- D) Indirect call

Answer: D) Indirect call

9. Which operator can be redefined by users in languages like C++?

- A) User-defined operator
- B) Dynamic operator
- C) Overloaded operator
- D) Generic operator

Answer: C) Overloaded operator

10. Coroutines differ from ordinary subprograms because:

- A) They return multiple values
- B) They support cooperative execution
- C) They cannot have parameters
- D) They are always recursive

Answer: B) They support cooperative execution

11. The activation record is stored on:

- A) Heap
- B) Register
- C) Stack
- D) Cache

Answer: C) Stack

12. The process of transferring control to a subprogram is called:

- A) Binding
- B) Referencing
- C) Call
- D) Closure

Answer: C) Call

13. Stack-dynamic variables are:

- A) Created before execution begins
- B) Allocated during runtime
- C) Constant throughout execution
- D) Stored in ROM

Answer: B) Allocated during runtime

14. Nested subprograms are:

- A) Subprograms defined inside other subprograms
- B) Subprograms with no parameters
- C) Recursive functions
- D) Generic functions

Answer: A) Subprograms defined inside other subprograms

15. Dynamic scoping determines variable references based on:

- A) Program structure
- B) Compiler rules
- C) Runtime calling sequence
- D) Data type

Answer: C) Runtime calling sequence

16. Data abstraction focuses on:

- A) Implementation details
- B) Hiding implementation from users
- C) Hardware design
- D) Memory management only

Answer: B) Hiding implementation from users

17. An Abstract Data Type (ADT) consists of:

- A) Data and operations on that data
- B) Data only
- C) Operations only
- D) Variables only

Answer: A) Data and operations on that data

18. Encapsulation is used to:

- A) Increase memory usage
- B) Hide internal details
- C) Improve processor speed
- D) Remove abstraction

Answer: B) Hide internal details

19. A parameterized ADT is:

- A) An ADT with no operations
- B) An ADT that works with multiple data types
- C) A recursive ADT
- D) A dynamic ADT

Answer: B) An ADT that works with multiple data types

20. Which construct is commonly used for naming encapsulations?

- A) Loop
- B) Package
- C) Array
- D) Pointer

Answer: B) Package

Part B: Fill in the Blanks (20)

1. A subprogram that returns a value is called a _____.

Answer: Function

2. The method in which a copy of the actual parameter is passed is _____.

Answer: Pass-by-value

3. In pass-by-reference, formal parameters act as _____ for actual parameters.

Answer: Aliases

4. The set of variables visible to a subprogram is its _____ **environment**.

Answer: Referencing

5. A function together with its referencing environment is called a _____.

Answer: Closure

6. Having multiple functions with the same name is called _____.

Answer: Overloading

7. A subprogram that can operate on different data types is called a _____ **subprogram**.

Answer: Generic

8. Calling a function through a function pointer is called _____ **calling**.

Answer: Indirect

9. User-defined operators are implemented through operator _____.

Answer: Overloading

10. Coroutines transfer control cooperatively using _____ operations.

Answer: Resume

11. The memory structure that stores activation records is called the _____.

Answer: Stack

12. An activation record is also known as a _____ **frame**.

Answer: Stack

13. Variables allocated when a subprogram is called are called _____ **dynamic variables**.

Answer: Stack

14. A subprogram defined inside another subprogram is called a _____ **subprogram**.

Answer: Nested

15. Dynamic scoping resolves references according to the _____ **chain**.

Answer: Dynamic

16. The process of hiding implementation details is called _____.

Answer: Abstraction

17. An ADT combines data and _____.

Answer: Operations

18. The mechanism used to hide data within an ADT is called _____.

Answer: Encapsulation

19. A parameterized ADT allows specification of different _____.

Answer: Data Types

20. Packages and modules are examples of naming _____.

Answer: Encapsulations

