1. Which of the following is a Boolean operator?  
Option A: OR  
Option B: FOR  
Option C: ++  
Option D: &  
Correct Answer: A  
  
2. What is the value of x in the equation: 2x + 5 = 15?  
Option A: 4  
Option B: 5  
Option C: 10  
Option D: 20  
Correct Answer: B  
  
3. Which of the following is a valid data type in Python?  
Option A: integer  
Option B: string  
Option C: boolean  
Option D: all of the above  
Correct Answer: D  
  
4. What is the purpose of a constructor in Java?  
Option A: To initialize an object  
Option B: To destroy an object  
Option C: To create a new object  
Option D: To compare two objects  
Correct Answer: A  
  
5. Which of the following is a fundamental data structure?  
Option A: Array  
Option B: Linked list  
Option C: Stack  
Option D: All of the above  
Correct Answer: D  
  
6. What is the time complexity of a linear search?  
Option A: O(1)  
Option B: O(n)  
Option C: O(n^2)  
Option D: O(log n)  
Correct Answer: B  
  
7. Which of the following is a type of inheritance?  
Option A: Single inheritance  
Option B: Multiple inheritance  
Option C: Hierarchical inheritance  
Option D: All of the above  
Correct Answer: D  
  
8. What is the purpose of a try-catch block in Java?  
Option A: To handle exceptions  
Option B: To create a new thread  
Option C: To read input from the user  
Option D: To write data to a file  
Correct Answer: A  
  
9. Which of the following is a search algorithm?  
Option A: Breadth-first search  
Option B: Depth-first search  
Option C: Binary search  
Option D: All of the above  
Correct Answer: D  
  
10. What is the purpose of a while loop?  
Option A: To execute a block of code repeatedly  
Option B: To terminate a program  
Option C: To read input from the user  
Option D: To write data to a file  
Correct Answer: A  
  
11. Which of the following is a type of sorting algorithm?  
Option A: Bubble sort  
Option B: Selection sort  
Option C: Merge sort  
Option D: All of the above  
Correct Answer: D  
  
12. What is the difference between a list and a tuple in Python?  
Option A: Lists are mutable, tuples are immutable  
Option B: Tuples are mutable, lists are immutable  
Option C: Lists can only contain objects of the same type, tuples can contain objects of different types  
Option D: Tuples can only contain objects of the same type, lists can contain objects of different types  
Correct Answer: A  
  
13. Which of the following is a valid modifier in Java?  
Option A: public  
Option B: private  
Option C: protected  
Option D: All of the above  
Correct Answer: D  
  
14. What is the purpose of an abstract class in Java?  
Option A: To define a common interface for a set of classes  
Option B: To create a new object  
Option C: To read input from the user  
Option D: To write data to a file  
Correct Answer: A  
  
15. Which of the following is a type of polymorphism?  
Option A: Method overloading  
Option B: Method overriding  
Option C: Operator overloading  
Option D: All of the above  
Correct Answer: D  
  
16. What is the difference between a static method and a non-static method in Java?  
Option A: Static methods can be called without creating an instance of the class, non-static methods cannot  
Option B: Non-static methods can be called without creating an instance of the class, static methods cannot  
Option C: Static methods can only access static data members, non-static methods can access both static and non-static data members  
Option D: Non-static methods can only access non-static data members, static methods can access both static and non-static data members  
Correct Answer: A  
  
17. Which of the following is a type of exception in Java?  
Option A: IOException  
Option B: SQLException  
Option C: RuntimeException  
Option D: All of the above  
Correct Answer: D  
  
18. What is the purpose of a synchronized block in Java?  
Option A: To ensure that only one thread can access a shared resource at a time  
Option B: To create a new thread  
Option C: To read input from the user  
Option D: To write data to a file  
Correct Answer: A  
  
19. Which of the following is a valid data type in C++?  
Option A: int  
Option B: float  
Option C: char  
Option D: All of the above  
Correct Answer: D  
  
20. What is the purpose of a header file in C++?  
Option A: To declare functions and classes  
Option B: To define functions and classes  
Option C: To read input from the user  
Option D: To write data to a file  
Correct Answer: A  
  
21. Which of the following is a valid operator in C++?  
Option A: +  
Option B: -  
Option C: \*  
Option D: All of the above  
Correct Answer: D  
  
22. What is the difference between a pointer and a reference in C++?  
Option A: A pointer stores the address of a variable, a reference stores the actual value of a variable  
Option B: A reference stores the address of a variable, a pointer stores the actual value of a variable  
Option C: A pointer can be reassigned, a reference cannot  
Option D: A reference can be reassigned, a pointer cannot  
Correct Answer: A  
  
23. Which of the following is a valid data type in JavaScript?  
Option A: number  
Option B: string  
Option C: boolean  
Option D: All of the above  
Correct Answer: D  
  
24. What is the purpose of a function in JavaScript?  
Option A: To define a set of instructions that can be executed multiple times  
Option B: To create a new object  
Option C: To read input from the user  
Option D: To write data to a file  
Correct Answer: A  
  
25. Which of the following is a valid operator in JavaScript?  
Option A: +  
Option B: -  
Option C: \*  
Option D: All of the above  
Correct Answer: D