1. In C and C++, which operator is used to access the value at a memory address?
a) * (asterisk)
b) & (ampersand)
c) -> (arrow)
d) :: (scope resolution)

2. What is the primary purpose of the const keyword in C and C++?
a) To declare a constant integer
b) To specify a variable is read-only
c) To define a global variable
d) To create an infinite loop

3. Which header file is used for input and output operations in C and C++?
a) <math.h>
b) <string.h>
c) <stdio.h>
d) <stdlib.h>

4. In C++, what is the default access specifier for members of a class?
a) public
b) private
c) protected
d) None of the above

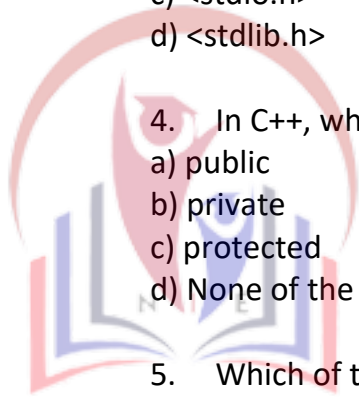5. Which of the following is a valid way to initialize an array in C or C++?
a) int arr[5] = {1, 2, 3, 4, 5};
b) int arr[] = {1, 2, 3, 4, 5};
c) Both a and b
d) None of the above

6. In C and C++, what is the purpose of the sizeof operator?
a) Calculate the sum of elements in an array
b) Find the size of a variable or data type in bytes
c) Determine the length of a string
d) Get the current time

7. Which keyword is used in C++ to dynamically allocate memory on the heap?
a) new
b) malloc
c) allocate

d) memory

8.   What is the role of a constructor in C++?
a) To destroy an object
b) To allocate memory for an object
c) To initialize an object's data members
d) To perform type conversion

9.   Which C and C++ function is used to open a file for writing?
a) fopen()
b) open()
c) create()
d) read()

10. In C and C++, which loop structure is used for executing a block of code a fixed number of times?
a) for loop
b) while loop
c) do-while loop
d) if-else loop

11. What is the purpose of the break statement in a loop in C and C++?
a) Terminate the program
b) Exit the loop and continue with the next iteration
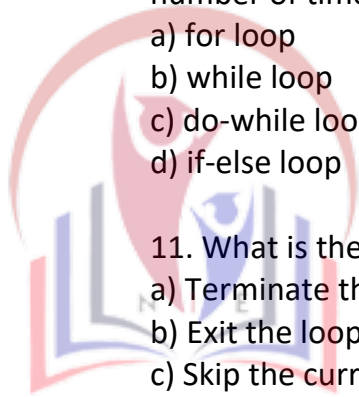c) Skip the current iteration and continue with the loop
d) None of the above

12. In C and C++, what is a pointer?
a) A function that returns a value
b) A variable that stores the memory address of another variable
c) A loop control structure
d) An arithmetic operator

13. What is the primary advantage of using a switch statement in C and C++?
a) It allows you to perform floating-point arithmetic
b) It can replace if-else constructs for multiple conditions
c) It can define and call functions
d) It can handle exceptions

14. Which operator is used for logical AND in C and C++?

a) &
b) &&
c) |
d) ||

15. In C and C++, what is the purpose of the return statement in a function?
a) Terminate the program
b) Return a value from the function
c) Skip the current iteration and continue with the loop
d) Print a message to the console

16. In C and C++, what is the purpose of the const member function?
a) It prevents modification of the object's data members
b) It allows modification of the object's data members
c) It deletes the object
d) It terminates the program

17. What is function overloading in C++?
a) Defining multiple functions with the same name but different parameters
b) Declaring functions within a class
c) Using functions to load external libraries
d) Reusing functions from other programs

18. In C and C++, what is the purpose of the #include directive?
a) To import libraries and header files
b) To define a constant value
c) To declare a variable
d) To comment out code

19. Which operator is used to allocate memory for a single object in C++?
a) new
b) malloc
c) allocate
d) memory

20. What is the purpose of the inline keyword in C++?
a) To specify that a function should be declared outside the class
b) To indicate that a function should be inlined by the compiler for performance
c) To mark a class as abstract
d) To define an object of a class

21 Which function in C is considered unsafe for reading input due to potential buffer overflow.
a) sancf()
b) gets()
c) read()
d) fgets()

22 Which function in C is used to read formatted input from a file?
a) sancf()
b) gets()
c) read()
d) fscanf()

23 What is the purpose of the loop condition in a while loop?
a) To determine the loop termination
b) To control the loop increment/decrement
c) To initialize the loop control variable
d) To execute the loop body

24 What is the base case in a recursive function?
a) The condition that determine when the function should terminate.
b) The initial values of the functions should terminate
c) The maximum number of recursive calls allowed
d) The statement that calls the function recursively

25 How do you declare a string in C?
a) char[] str;
b) char str[];
c) string str;
d) char *str;