1. **What is the highest index for an array with 10 elements in C?**
   a) 5
   b) 9 ✔
   c) 10
   d) 11
2. **Which function is used to compare two strings in C?**
   a) strcmp ✔
   b) strcat
   c) strlen
   d) strncmp
3. **An array's elements are always stored in …… memory locations?**
   a) sequential ✔
   b) random
   c) both A & B
   d) None of the above
4. **A pointer to a pointer stores ……. of another …… variable.**
   a) index, array
   b) address, pointer ✔
   c) address, union
   d) none
5. **In C, what is a double pointer (int)**?**
   a) a pointer to an integer
   b) A pointer to a pointer ✔
   c) A pointer to a double data type
   d) none of the above
6. **What is the purpose of the `malloc()` function?**
   a) Allocate memory on the stack
   b) Allocate memory on the heap ✔
   c) Allocate memory on the variable
   d) Allocate memory on the function
7. **While declaring a pointer variable, which operator do we use?**
   a) dot
   b) Arrow
   c) Address
   d) indirection ✔
8. **The default storage class of a local variable is?**
   a) Auto ✔
   b) Static
   c) extern
   d) Register
9. **In which method is the address of the variable passed by the calling function to the called function?**
   a) Call-by-value
   b) Call-by-reference ✔

c) Both A & B
d) None

10. **The size of a Union is determined by the size of the ……..**
    a) first member in the union
    b) Last member in the union
    c) Biggest member in the union ✔
    d) sum of the size of all members
11. **What is the return type of `malloc()` or `calloc()`?**
    a) int *
    b) int **
    c) void * ✔
    d) void **
12. **The process in which a function calls itself directly or indirectly is called?**
    a) Recursion ✔
    b) type conversion
    c) constant
    d) storage classes
13. **File is of type ……**
    a) int type
    b) char type ✔
    c) struct type
    d) None of the above
14. **Which function will you choose to join two words?**
    a) strcpy()
    b) strcat() ✔
    c) strlen()
    d) strncat()
15. **Allocating memory at runtime is known as ……..**
    a) static memory allocation
    b) dynamic memory allocation ✔
    c) continuous memory allocation
    d) None
16. **If an array is declared as `arr[] = {1, 3, 5, 7, 9};`, then what is the value of `arr[3]`?**
    a) 1
    b) 9
    c) 7 ✔
    d) 5
17. **#error is used for?**
    a) printing error messages ✔
    b) printing output
    c) Both A & B
    d) None
18. **What can be used to input a string with blank space?**
    a) inline

b) None
c) getline() ✔
d) putline

19. **Which of the following cannot be a structure member?**
    a) function ✔
    b) collection of elements
    c) array
    d) another structure
20. **Why is `calloc()` function used for?**
    a) allocates the specified number of bytes
    b) calls the specified block of memory for execution.
    c) allocates the specified number of bytes and initializes them to zero ✔
    d) increases or decreases the size of the specified block of memory and reallocates it if needed
21. **Array Index start with __ index?**
    a) 0 ✔
    b) -0
    c) 1
    d) -1
22. **Given the declaration `int arr[5] = {10, 20, 30, 40, 50};`, what does `*(arr + 3)` return?**
    a) 10
    b) 30
    c) 40 ✔
    d) 50
23. **How to print the last element in an array?**
    a) SIZE+0
    b) SIZE+0
    c) SIZE+1
    d) SIZE-1 ✔
24. **Which of the following operations is invalid in a two-dimensional array `int arr[3][4]`?**
    a) Accessing `arr[2][3]`
    b) Assigning `arr[3][3] = 10;` ✔
    c) Declaring `arr` with dimensions `[3][0]`
    d) All of the above
25. **Why is a null character (`\0`) used in strings in C?**
    a) To indicate the end of the string ✔
    b) To store whitespace in the string
    c) To determine the length of the string at compile time
    d) To reserve memory for additional characters

26. **What will the following code print?**

```
char str[] = "Hello";
printf("%s", str + 2);
```

a) He
b) llo ✔
c) Hello
d) l

27) **What does the following code snippet print?**

```
int x = 10, *p = &x;
printf("%d", *p + x);
```

a) 10
b) 20 ✔
c) 15
d) Compiler error

28) **Which of the following is invalid for pointer arithmetic?**
a) Adding an integer to a pointer
b) Subtracting two pointers
c) Dividing a pointer by an integer ✔
d) Incrementing a pointer

29) In the code below, what does `ptr` point to after the execution?

```
int arr[] = {1, 2, 3, 4};
int *ptr = arr;
ptr += 2;
```

a) The first element of `arr`
b) The second element of `arr`
c) The third element of `arr` ✔
d) The fourth element of `arr`

30) **What is the size of a pointer variable on a 64-bit system?**
a) 4 bytes
b) 8 bytes ✔
c) 16 bytes
d) Depends on the data type being pointed to

31) **What is the return type of the following function?**

```
int add(int a, int b) { return a + b; }
```

a) int ✔
b) void
c) float
d) None of the above

32) **What is the output of this code?**

```
void func(int  *x) {
    *x = *x + 10;
}
void main() {
    int y = 5;
    func(&y);
    printf("%d", y);
}
```

a) 5
b) 10
c) 15 ✔
d) Compilation error

33)**What is the correct way to define a structure in C?**
a) `struct { int a, b; };`
b) `struct MyStruct { int a, b; };` ✔
c) `structure MyStruct { int a, b; };`
d) `struct MyStruct { int a, b; }`

34)**Which operator is used to dereference a pointer?**
a) &
b) * ✔
c) ->
d) None of the above

35)**If you declare a union with members of different types, what will be the maximum size of the union?**
a) The size of the smallest member
b) The size of the largest member ✔
c) The sum of the sizes of all members
d) The average size of all members

36)**Which of the following is NOT a valid file opening mode in C?**
a) "r"
b) "w"
c) "rw" ✔
d) "a"

37)**What is the purpose of the `fclose` function in C?**
a) To write data to a file
b) To close an open file and free associated resources ✔
c) To delete the file from the disk
d) None of the above

38)**Which function writes a single character to a file?**
a) `fwrite()`
b) `fputc()` ✔
c) `fgets()`
d) `fprintf()`

39)**Which of the following represents a correct usage of `fprintf` in C?**
a) `fprintf("%s", "Hello");`
b) `fprintf(filePtr, "Hello World");` ✔
c) `fprintf(filePtr, "%d", 42);`
d) `fprintf("Hello");`

40)**Which of the following functions is used to close a file?**
a) `fread()`
b) `fclose()` ✔
c) `fexit()`
d) `fstop()`

41) In the code below, what does `ptr` point to after the execution?

```
int arr[] = {1, 2, 3, 4};
int *ptr = arr;
ptr += 2;
```

a) The first element of `arr`
b) The second element of `arr`
c) The third element of `arr` ✔
d) The fourth element of `arr`

42) Why is a null character (`\0`) used in strings in C?
a) To indicate the end of the string ✔
b) To store whitespace in the string
c) To determine the length of the string at compile time
d) To reserve memory for additional characters

43) What does the following code snippet print?

```
int x = 10, *p = &x;
printf("%d", *p + x);
```

a) 10
b) 20 ✔
c) 15
d) Compiler error

44) What is the output of this code?

```
void func(int  *x) {
    *x = *x + 10;
}
void main() {
    int y = 5;
    func(&y);
    printf("%d", y);
}
```

a) 5
b) 10
c) 15 ✔
d) Compilation error

45) Which of the following is invalid for pointer arithmetic?
a) Adding an integer to a pointer
b) Subtracting two pointers
c) Dividing a pointer by an integer ✔
d) Incrementing a pointer

46)Which operator is used to dereference a pointer?
a) &
b) * ✔
c) ->
d) None of the above

47) What does the following code snippet print?

```
int x = 10, *p = &x;
printf("%d", *p + x);
```

a) 10
b) 20 ✔
c) 15
d) Compiler error

48)What is the correct way to define a structure in C?

a) `struct { int a, b; };`

b) `struct MyStruct { int a, b; };` ✔

c) `structure MyStruct { int a, b; };`

d) `struct MyStruct { int a, b; }`

49) Given the declaration `int arr[5] = {10, 20, 30, 40, 50};`, what does `*(arr + 3)` return?

a) 10

b) 30

c) 40 ✔

d) 50

50)Which of the following represents a correct usage of `fprintf` in C?

a) `fprintf("%s", "Hello");`

b) `fprintf(filePtr, "Hello World");` ✔

c) `fprintf(filePtr, "%d", 42);`

d) `fprintf("Hello");`