



C Assignment for Practice

Short answer type:

1. What is token?
2. What is identifier?
3. What is keyword?
4. What is variable and different types of variables in C?
5. What is datatype? Write sizes and ranges of different data types?
6. What is high level language vs machine level language?
7. Justify C is a procedure oriented language?
8. What is sizeof()?
9. What is difference between operator vs operand?
10. What is difference between program and process?
11. What is operating system. Give examples?
12. What is difference between compiler and interpreter?
13. What is algorithm, pseudocode and components of flowchart?
14. What is source code, object code and executable code?
15. What is difference between logical error vs syntax error?
16. What is precedence in operators?
17. What is conditional branching and different conditional branching statements with syntax?
18. What is looping? Write different looping statements with syntax?
19. What is switch statement?
20. Why goto statement is used in C?
21. What is difference between break and continue? Give example.
22. What is array? Write syntax of 1D and 2D array for declaration and initialization?
23. What is string? Declare a string "abcd xyz gd."
24. How to input and print a string using string functions?
25. Write a program to count the number of words and vowels in a string="abcd aabb erp sql."
26. Write different predefined string functions?
27. What is function. What is the use?
28. What is function call, function declaration and function definition? Give example?
29. What is pass by value and pass by reference.
30. What is recursion? Give examples for factorial and Fibonacci series.
31. What is pointer? Give example with syntax?
32. What is double pointer and null pointer?
33. How pointers are used for self-referential structures?
34. What is linked list?
35. What is difference between array and linked list?
36. What is difference between static memory allocation and dynamic memory allocation?
37. What is malloc(), calloc(), realloc() and free()?
38. What are storage classes?
39. What is structure? Write syntax?
40. What is difference between structure and union? Give example.
41. What is array of structure?
42. What is file? What are different types of files?
43. What are different operations and modes in file?
44. What are different file handling functions available in C?
45. What is difference between binary searching and linear searching?
46. What is space and time complexity?
47. What is sorting. What are different sorting algorithms?
48. What is bubble sort? How it is done?
49. What is Insertion sort? How it is done?
50. What is Selection sort? How it is done?



Long answer type/short questions

1. Describe the computer system by drawing the architecture and discuss about the functionality of disk, memory, processor, program, process, program loading, program execution and compilation.
2. What is an algorithm and pseudocode? Discuss the characteristics of algorithm.
3. Write an algorithm to calculate the average of 5 numbers in an array. Draw the flowchart of this algorithm?
4. Write short notes on:
 - a. Source code
 - b. Object code
 - c. Executable code
 - d. Syntax and logical error
 - e. Variable
 - f. Memory location
5. Describe the different type of operators in C. Give examples of each type of operator?
6. What are the important decision-making control statements. Describe with example and flowchart.
7. What are different looping statements. Describe with syntax.
8. Write a program to find even numbers between 50 to 100.
9. Write a program to add from 20 to 100.
10. Write a program to swap two numbers a=5, b=9.
11. What is switch statement. Write a program to take two options 1 and 2 for add and multiply two numbers.
12. What is the difference between break and continue. Write a program to show the use of break and continue.
13. What is array. Describe the declaration and initialization of 1D and 2D array using syntax and example.
14. Write a program to count the number of ones and zeros in array A={1,1,1,0,0,1,0,1}.
15. Write a program to change the value 22 to 23 in the array A={22,23,43,45,55,65,22,34,22}.
16. Write a program to add two matrix and multiply two matrices.
17. Write a program to find the average of the elements in an 2D array.
18. What is different category of functions possible in C. Give examples.
19. What is the difference between call by value and call by reference in functions.
20. Write a program to pass an array to find the average?
21. Write a program to pass a function to find the sum of elements of an array?
22. What is recursion? Write a program to find the factorial of a number entered by user using recursion?
23. Write a program to print the Fibonacci series till 10th value of it using recursion?
24. Write a program using recursion to solve Ackerman function.
25. What is sorting. How the quick sort and merge sort are done?
26. Solve quick sort and merge sort using recursion program.
27. Write a program to sort the elements of an array that is in random order using quick sort and merge sort?
28. What is pointer? Write a program to add two numbers using pointers?
29. Write a program to add elements of an array using pointers and also print the address of each element?
30. Write a program to print elements of an array using pointer?
31. Write a program to call an addition function using pointer?
32. What are self-referential structures.
33. Describe linked list with a diagram. Discuss the differences of linked list and array.
34. Write sort notes on:
 - a. Dynamic memory allocation with example.
 - b. Static memory allocation with example.
35. What is the use of malloc(), realloc(), calloc() and free() in dynamic memory allocation?
36. Write a program using malloc() to allocate 5 block of memory to store 5 elements of an array.
37. Write a program using realloc() function to allocate 5 blocks of memory to store 5 elements of an array?
38. What is structure. Discuss about the syntax.
39. Write a program to store and print the information of employee such as name, age, and ID using structure.
40. Write a program to store and print the information of 10 employees such as name and employee ID using Array of structures?
41. Describe the difference between structure and union and also give one example to differentiate?
42. What is a file. What are different file handling operations?
43. Describe the different modes of a file?
44. Write a program to open a file and write data into the file?
45. Write a program to open the same file and read data in the file?
46. Describe different predefined file handling functions?
47. What is the difference between searching and sorting?
48. Describe the time and space complexity in linear and binary searching.
49. Describe the time and space complexity in Bubble, insertion and selection sorting.
50. Write programs to sort elements of an array that is in random order, using bubble sort, insertion sort and selection sort.