IMPORTANT QUESTIONS LIST
COMPUTER SYSTEM & PROGRAMMING IN C

1. What is **digital computer**? Draw block diagram of digital computer and explain each component of it.
2. Explain memory hierarchy with the help of diagram.
3. What is an **Operating System**? Discuss various functions of Operating System.
4. What is **structured programming**? Explain and give examples of relevant constructs using pseudo-code. Highlight the advantages and disadvantages of structured programming.
5. What do you mean by an **algorithm**? Explain the properties of algorithm.
6. What do you mean by **flowchart**? Discuss the different symbols used in flowchart. Discuss advantages and limitations of flowchart.
   (i) Draw a flowchart to find the factorial of the given number.
   (ii) Write an algorithm and draw a flowchart for finding the largest among 3 numbers.
   (iii) Draw a flowchart to sum first n natural numbers.
   (iv) Write an algorithm and draw a flowchart to check leap year.
   (v) Develop an algorithm to display all prime numbers between given range.
   (vi) Draw flowchart to check that entered number is palindrome or not.
   (vii) Draw a flowchart to print Fibonacci series of n terms.

7. **Differentiate between:**
   (i) System Software and Application Software
   (ii) Low-level, middle and high level languages
   (iii) Compiler, Interpreter.
   (iv) DOS, Windows and UNIX O.S (list 5 commands of DOS and UNIX OS)
8. Convert the following:
   Decimal ----to -------Binary
   Binary ------to ------ Decimal
   Octal ------to ---------Decimal
   Hexadecimal ----to ----Decimal etc.
9. What are different **data types** in C language? Explain range,memory size of each with its format specifier.
10. What are **operators**? Explain different types of operators used in C
11. Describe **precedence and associativity** of operators.
12. For , While and do-while loop with examples.
13. Differentiate between **break** and **continue** with examples.
14. Differentiate between **switch** and **if-else** with examples.
15. What are **functions**? What are advantages of using multiple functions in a program?
16. Explain the difference between **parameter passing mechanisms** to the function? WAP to swap 2 numbers using "**call by value"** and "**call by reference**."
17. What do you mean by **recursion**? What are the main principles of recursion?
18. Define the various **storage classes** in C. Explain each with suitable examples.

19. What do you mean by an **array**? In what way array is different from an ordinary variable.

20. What is a **pointer** in C? How are they used, explain with the help of suitable examples. Also discuss its advantages and disadvantages.

21. Explain Dynamic memory allocation. Differentiate between malloc() and calloc() functions.

22. What are **structures**? Write the syntax of structure. How can the size of the structure be determined? Which operator is used to access the member of the structure?

23. Differentiate between **structure** and **union**.

24. What do you mean by **C pre-processor**? Define the function of a C pre-processor. Explain the pre-processor directives.

25. What is macro? How is it substituted? Write a program that illustrates the use of macros with argument.

26. Explain the different **file opening modes** in C. Discuss basic **file handling functions.**

Programs List

1. WAP to check whether a given year is leap year or not.
2. WAP to calculate the factorial of a given number (using **loop** and **recursion**).
3. WAP to find out whether a given number is prime or not.
4. WAP to display all Prime numbers between a given range m and n.
5. WAP to print and sum the Fibonacci series of n terms using recursion.
6. WAP to check whether a given number is palindrome or not.
7. WAP to check whether a given number is Armstrong number or not.
8. WAP to print Fibonacci series of n terms using recursion.
9. WAP for Linear Searching to search a number in a given array.
10. WAP for Binary Searching to search a number in a given array.
11. WAP for Bubble sorting to sort the numbers in a given array.
12. WAP to reverse the given string without using strrev() function.
13. WAP to find number of words in a given string.
14. WAP to check whether given string is Palindrome or not.
15. WAP for matrix addition.
16. WAP for matrix multiplication.
17. WAP to store the records of n students and display the Names of students in merit list of top 10. Each record consists: {RollNo., Name, Branch, Year, Marks}.
18. WAP to store the records of n Employees of a company. Display the list of those employees who are working in "Computer Science" department and whose salary >= 25000. Each record consists of: emp_id, emp_name, department, salary.
19. WAP in C to copy the text of one file to another.
20. WAP to store the records of students {Rollno, name, branch, marks} in a file "record.doc"