

Programming with C

UNIT – I: Computer Fundamentals , Algorithm and Basics of C

Important Questions:

1. Define computer. Explain the classification of computers.
 2. What is an operating system? Describe its functions.
 3. Explain the Block diagram of computer/Operational overview.
 4. What are programming languages? Explain generations and classification.
 5. Distinguish between compiling, interpreting, loading, and linking.
 6. What are the steps involved in developing a program?
 7. **Define an algorithm. What are the characteristics of a good algorithm?**
 8. **Explain Structure of a c program with an example**
 9. **What are tokens in C? Explain keywords, identifiers, constants, and operators.**
 10. **Explain data types in C with examples.**
 11. **What is type conversion? Differentiate implicit and explicit casting.**
 12. **Explain briefly about expression evaluation and its precedence.**
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✓UNIT – II: Input/Output, Control Statements, Arrays & Strings

Important Questions:

1. Differentiate between formatted and non-formatted I/O functions.
 2. Explain the use of `printf()` and `scanf()` with examples.
 3. What are escape sequences? List any 5 with meanings.
 4. Write a C program to check if a number is prime.
 5. Write a C program to find the sum and average of an array.
 6. Write a program to reverse a string.
 7. **Explain selection control statements: if, if-else, nested if-else, switch.**
 8. **Explain while, do-while, and for loops with flowcharts and examples.**
 9. **Differentiate between break, continue, and goto statements.**
 10. **What is an array? Explain about types of arrays with examples?**
 11. **Explain character arrays and string functions (`strlen`, `strcpy`, `strcmp`, `strcat`) from `string.h`.**
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✓UNIT – III: Functions & Pointers

Important Questions:

1. Explain about different types of functions
 2. How to pass arrays to functions? Write an example.
 3. Write a program to swap two numbers using pointers.
 4. Explain pointer to pointer and pointer to array with diagrams.
 5. **Explain call-by-value and call-by-reference with examples.**
 6. **Write a recursive function to calculate factorial.**
 7. **What is the scope and lifetime of a variable in C?**
 8. **Explain the different storage classes in C.**
 9. **What is a pointer? Explain pointer declaration and initialization.**
 10. **What is a function? Explain different parts of function.**
 11. **What is dynamic memory allocation? Explain `malloc()`, `calloc()`, and `free()`.**
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✓UNIT – IV: Structures, Unions, and File Handling

Important Questions:

1. Write a program using structures to store student data (roll, name, marks).
2. How to access members of a structure using a pointer?
3. What is a union? How is it different from a structure?
4. Write a C program to copy content from one file to another.
5. How to use `fgets()` and `fputs()` for file input and output?
6. Explain file access modes (`r`, `w`, `a`, `r+`, etc.).
7. **What is a structure in C? How do you declare and use it?**
8. **Compare structure and union with examples.**
9. **What is an enumerated type? Give an example of its usage.**
10. **Explain file handling functions in C: `fopen()`, `fclose()`, `fprintf()`, `fscanf()`.**
11. **Differentiate between text and binary files.**