C Language

Unit-wise syllabus and marks for the 2026-27 session.

UNITS	SESSION
8	2026-27

Exam pattern. As a general programming course, C has no fixed board exam split. Assessment in school/college settings is typically theory plus a lab/practical component (commonly around 70 theory / 30 practical), with practical evaluation based on a programming lab record and viva.

Practical. Hands-on coding throughout: 175+ guided programming exercises spanning every topic, plus mini-projects such as a calculator, student record system using structures and files, and matrix/string utilities. Each unit includes lab assignments compiled and run on a real compiler, with debugging and code-tracing practice.

#	UNIT AND TOPICS	MARKS
1	**Unit 1: Introduction to C and Program Structure** History and features of the C language; Structure and life cycle of a C program (editing, compiling, linking, running); Writing and running your first C program; Header files, main() function, and the compilation process; Comments, statements, and basic syntax; Input and output: printf() and scanf()	–
2	**Unit 2: Data Types, Variables, and Operators** Identifiers, keywords, and variables; Data types: int, float, double, char and their sizes; Constants and the const qualifier; Arithmetic, relational, logical, assignment, and increment/decrement operators; Bitwise and ternary operators; Type conversion and type casting; Operator precedence and associativity	–
3	**Unit 3: Control Structures** Decision making: if, if-else, nested if-else, else-if ladder; switch-case statements; Loops: while, do-while, and for; Nesting of loops; Jump statements: break, continue, and goto	–
4	**Unit 4: Arrays and Strings** One-dimensional arrays: declaration, initialization, and traversal; Array operations: searching, insertion, deletion, and sorting (bubble sort); Two-dimensional arrays: matrix addition, transpose, and multiplication; Strings as character arrays; String input/output and built-in string functions (strlen, strcpy, strcmp, strcat)	–
5	**Unit 5: Functions and Storage Classes** Defining and calling functions; function prototypes; Function arguments and return values; Call by value vs. call by reference; Recursion; Scope and lifetime of variables; Storage classes: auto, register, static, extern; Standard library and math functions	–

#	UNIT AND TOPICS	MARKS
6	**Unit 6: Pointers and Dynamic Memory** Memory addresses and pointer fundamentals; Pointer declaration, dereferencing, and arithmetic; Pointers and arrays; Passing pointers to functions (call by reference); Dynamic memory allocation: malloc, calloc, realloc, free	–
7	**Unit 7: Structures, Unions, and Enums** Structure declaration, initialization, and accessing members; Array of structures and nested structures; Passing structures to functions and structure pointers; Unions and their use cases; Enumerations (enum) and typedef	–
8	**Unit 8: File Handling and the Preprocessor** Introduction to files and streams in C; Opening, closing, reading, writing, and appending to files; Sequential and random access of files; The C preprocessor: #include, #define, and macros; Conditional compilation	–