August – Basics of C (Unit I)

Focus: Introduction, program structure, data types, input/output

Week 1–2:

- History, importance & structure of C program
- Character set, constants, variables, identifiers & keywords
- Data types, symbolic constants, assignment statements

Week 3–4:

- Input/Output: `scanf()`, `printf()`
- Input functions: `getchar()`, `gets()`, `getch()`, `getche()`
- Output functions: `puts()`, `putchar()`

Practical Exercises:

- Write a program to print name, age, etc.
- Simple calculator using `scanf()` and `printf()`
- Character I/O programs

September – Operators & Expressions (Unit II)

Focus: Operators, expressions, decision making, loops

Week 1–2:

- Arithmetic, relational, logical, bitwise & unary operators
- Operator hierarchy & evaluation of expressions
- Conditional operators, special operators

Week 3–4:

- Type casting & conversion
- Decision making: `if`, `if-else`, nested `if`, `else-if ladder`
- Switch-case, break, continue, goto
- Looping: `for`, `while`, `do-while`

Practical Exercises:

- Largest of three numbers
- Prime number check

- Factorial using loop
- Demonstration of `if-else ladder`

October – Arrays, Functions & Strings (Unit III)

Focus: Arrays, functions, string handling

Week 1–2:

- One-dimensional arrays: declaration, initialization, memory representation
- Two-dimensional arrays: declaration, initialization, memory representation

Week 3–4:

- Functions: definition, prototype, arguments (call by value, call by reference)
- Recursive functions
- Strings: declaration, initialization, string I/O
- String functions: length, copy, compare, concatenate, substring search

Practical Exercises:

- Average of marks using single-dimensional array
- Matrix addition & multiplication
- Recursive factorial & Fibonacci
- String palindrome check, substring search

November – Pointers & Structures (Unit IV)

Focus: Pointers, arrays with pointers, structures & unions

Week 1–2:

- Pointers: declaration, initialization, accessing values
- Pointers & arrays
- Pointer arithmetic

Week 3–4:

- Structures: definition, declaration, initialization
- Accessing structure members, array of structures
- Unions: definition, difference between structure & union

Practical Exercises:

- Pointer to swap numbers
- Array of structures (student details)
- Union demonstration (memory sharing)

December – Practicum & Revision (Unit V)

Focus: Practical problems + revision for exam

Week 1–2:

- Radius & circumference of a circle
- Biggest of three numbers
- Prime number check
- Palindrome number

Week 3–4:

- Continuous number input until 999 (sum of positives only)
- Percentage of marks with grade (using `if-else ladder`)
- Roots of quadratic equation
- Revision of all topics & sample question papers