1. What is C Programming?
Ans: C Programming is a General-Purpose, Structured, and High-Level Programming Language developed by Dennis Ritchie in 1972 at Bell Labs.
It is widely used for developing System Software, Operating Systems, Embedded Systems, and Application Programs. C supports features like functions, loops, arrays, and memory management.
It is also known as the "mother of all Programming Languages" because many modern languages such as C++, Java, and Python are derived from it. Due to its speed, portability, and flexibility, C remains one of the most important languages in Computer Science.

2.Applications of c programming ?
Ans:
C programming is widely used in various fields due to its speed, efficiency, and portability. Some important applications are:

1. Operating Systems:
C is used to develop major parts of operating systems like Windows, Linux, and UNIX because it provides low-level

hardware access.

2. Embedded Systems:
C is commonly used in microcontrollers and embedded devices such as washing machines, medical instruments, and automative systems.

3. System Software:
Compilers, interpreters, device drivers, and network drivers are developed using C for high performance.

4. Application Software:
Applications like text editors, databases, graphical tools, and utilities are built using C.

5. Game Development & Real-Time Systems:
Many graphics engines and real-time applications use C because of its fast execution and efficient memory management.

3.What is variable ?
Ans:
A variable in C programming is a named memory location used to store data that can be changed during program execution. It acts as a container that holds values such as numbers or characters.

Variables allow a programmer to perform operations by storing, updating, and retrieving data as needed. Each variable has:

1. Name – the identifier used to access the value

2. Data Type – defines the kind of data (int, float, char, etc.

3. Value – the actual data stored

4. Memory Location – the address where the variable is stored

Variables make programs flexible and dynamic because the same program can work with different inputs by simply changing the variable values. Thus, variables are essential building blocks of any C program.

4. What are Different Data Types in C Programming ?
Ans:
Data types in C define the type of data a variable can store. They tell the compiler how much memory to allocate and what kind of operations can be performed on the data. C provides the following main categories of data types:

1. Basic (Primary) Data Types:
These are the fundamental types used to store simple values.

int – stores integers

float – stores decimal numbers

double – stores large decimal numbers

char – stores single characters

2. Derived Data Types:
These are constructed from basic data types.

Arrays

Pointers

Functions

Structures

3. Enumeration Data Type:
The enum type allows assigning names to a set of integer constants, improving readability.

4. Void Data Type:
void represents "no value" and is mainly used in functions that do not return anything.

5. What is a Format Specifier?
Ans:
A format specifier in C programming is a special symbol used in input and output functions like printf() and scanf() to tell the compiler what type of data is being handled. It defines the data type of a variable so the function knows how to read or display the value correctly.

Format specifiers always begin with the % symbol and are used to control the formatting of output on the screen. They help ensure that integers, floating-point numbers, characters, and strings are displayed in the correct format.

Common format specifiers:

%d – for integers

%f – for floating-point numbers

%c – for single characters

%s – for strings

%lf – for double values

Format specifiers make input/output operations accurate and allow programmers to display data in a well-structured way.