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Q1.

Ans: The main() function in a C program serves as the entry point for program execution. Its primary purpose is to define where the program's control flow begins.

Significance:

Program Start, Control Flow, Required for executable (every function must have one unless it is a library), Return Value.

Q2.

Ans: Variable Declaration: instructs the compiler to reserve the memory name and type of the variable (reserves memory but does not initialise a value). `int x;`

Variable Initialization: Given an initial value to the variable on declaration or declaration afterward. `int x = 10;`

Q4.

Ans:

- `int` → Stores integers. Example: `int age = 20;`
- `float` → Stores decimal values (single precision). Example: `float price = 10.5;`
- `double` → Stores decimal values (double precision). Example: `double pi = 3.14159;`
- `char` → Stores single characters. Example: `char grade = 'A';`
- `void` → Represents no value. Example: `void main()`

Q5.

Ans:

Implicit Conversion (Type Casting / Type Promotion): Done automatically by the compiler when assigning a smaller data type to a larger one.

Example:

```
int a = 5;
```

```
float b = a; // int is converted to float
```

- Explicit Conversion (Type Casting by User): Done manually by the programmer using casting.

Example:

```
float x = 5.75;
```

```
int y = (int)x; // float is explicitly converted to int
```

Q7.

Ans: The scanf() function is used to take input from the user. It stores the entered value into the specified variable by using format specifiers.

Example:

```
#include <stdio.h>
```

```
int main() {
```

```
    int age;
```

```
    printf("Enter your age: ");
```

```
    scanf("%d", &age);
```

```
    printf("Your age is %d.\n", age);
```

```
    return 0;
```

```
}
```