C Language Concepts Summary

1. Declaring and Initializing Variables in C

- Declaration means defining the variable and its type:

int x; float y; char ch;

- Initialization means assigning a value when declaring:

int x = 10; char letter = 'A';

2. Performing Arithmetic Operations with Numeric Variables in C

- Basic operations:

+ (Addition), - (Subtraction), * (Multiplication), / (Division), % (Modulus)

Example:

int a = 10, b = 3;

int sum = a + b;

int remainder = a % b;

3. Using Conditional Statements in C

- if-else structure:

if (a > b) { ... } else if (a == b) { ... } else { ... }

- switch-case structure:

switch (grade) {

case 'A': printf("Excellent"); break;

default: printf("Invalid grade");

}

4. Iterating with Loops in C

- for loop:

```c
for (int i = 0; i < 5; i++) { printf("%d\n", i); }
```

- while loop:

```c
int i = 0;
while (i < 5) { printf("%d\n", i); i++; }
```

- do-while loop:

```c
int i = 0;
do { printf("%d\n", i); i++; } while (i < 5);
```

5. Using Constants in C

- Use const or #define for constants:

```c
const float PI = 3.14;
#define MAX 100
```