

Chapter 5 – Conditional Control Construct (Decisions)

Short Questions with Easy Answers

Q1. Define Control Structure.

👉 A **control structure** controls the **flow of execution** in a program.

- It decides which statements to execute and in what order.
- Example:

```
if (x > 0) {
    printf("Positive number");
}
```

Q2. Write three selection statements and three repetition statements.

- **Selection statements:** if, if-else, switch
 - **Repetition statements (loops):** for, while, do...while
-

Q3. Describe sequence structure.

👉 In **sequence structure**, statements are executed **one by one** in order.

- Example:

```
int a = 5;
int b = 10;
int sum = a + b; // executed in sequence
```

Q4. Describe a repetition structure.

👉 A **repetition structure (loop)** repeats statements until a condition is false.

- Example:

```
for (int i = 1; i <= 5; i++) {
    printf("%d ", i);
}
```

Q5. Explain "if" statement.

👉 if is a **decision-making statement**. It executes a block only if the condition is **true**.

- Example:

```
if (marks >= 50) {
    printf("Pass");
}
```

Q6. Define compound statement.

👉 A **compound statement** = multiple statements grouped inside { }.

- Example:

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```

if (x > 0) {
    printf("Positive");
    x++;
}

```

Q7. What is the use of "if-else" statement?

👉 if-else is used when we want **two choices** – one executes if condition is true, another if condition is false.

- Example:

```

if (marks >= 50)
    printf("Pass");
else
    printf("Fail");

```

Q8. Write the syntax of "if-else-if" statement.

```

if (condition1) {
    statement1;
}
else if (condition2) {
    statement2;
}
else {
    statement3;
}

```

Q9. What is the use of "if-else-if" statement?

👉 Used when there are **many options** and only one block should run.

- Example:

```

if (marks >= 80)
    printf("Grade A");
else if (marks >= 60)
    printf("Grade B");
else
    printf("Grade C");

```

Q10. Differentiate between if and if-else statement.

- **if** → executes only when condition is true; does nothing if false.
- **if-else** → executes one block if condition is true, and another if false.

✔ Long Questions (Easy Notes)**Q1. Explain basic control structures.**

👉 There are **three basic control structures** in C:

1. **Sequence** → statements run one after another.
2. **Selection** → chooses between options (if, if-else, switch).
3. **Repetition** → repeats steps (for, while, do-while).

Q2. Explain if statement with example.

👉 if checks a condition and executes block if true.

- Example:

```
int num = 10;
if (num > 0) {
    printf("Positive number");
}
```

Q3. What is switch statement? Explain working with example.

👉 switch is used to choose **one option from many**, based on value.

- Example:

```
int day = 3;
switch(day) {
    case 1: printf("Monday"); break;
    case 2: printf("Tuesday"); break;
    case 3: printf("Wednesday"); break;
    default: printf("Invalid day");
}
```

Q4. Explain working of else-if statement.

👉 else-if handles **multiple conditions** in order. Only **one block executes**.

- Example:

```
if (age < 13)
    printf("Child");
else if (age < 20)
    printf("Teenager");
else
    printf("Adult");
```

Q5. Define compound statement and write syntax of if-else compound statement.

👉 A **compound statement** groups multiple instructions inside { }.

Syntax:

```
if (condition) {
    statement1;
    statement2;
}
else {
    statement3;
    statement4;
}
```

◆ Extra External Questions with Answers

Q1. What is the difference between while and do-while loop?

- while → checks condition first, then executes.
- do-while → executes once first, then checks condition.

// while

```
int i=1;
while(i<=3) {
    printf("%d ", i);
    i++;
}
```

// do-while

```
int j=1;
do {
    printf("%d ", j);
    j++;
} while(j<=3);
```

Q2. When should we use a switch instead of if-else-if?

- 👉 Use **switch** when comparing one variable with multiple values.
- 👉 Use **if-else-if** when checking **different conditions**.

Q3. What is a nested if statement?

👉 An if inside another if.

- Example:

```
if (marks >= 50) {  
    if (marks >= 80)  
        printf("Excellent");  
    else  
        printf("Good");  
}
```

Q4. Write a program using if-else to check even or odd number.

```
#include <stdio.h>  
  
int main() {  
    int num;  
    scanf("%d", &num);  
    if (num % 2 == 0)  
        printf("Even");  
    else  
        printf("Odd");  
    return 0;  
}
```