

LECTURE NO. 1

PREVIEW OF TODAY'S TOPICS

☛ Control Structure & Types of Control Structure , IF Statement

CONTROL STRUCTURE AND TYPES OF CONTROL STRUCTURE, IF STATEMENT**LONG QUESTIONS**

1. What is Control Structure? Briefly describe the basic control structures for writing programs. (LHR 2021)(BWP 2019, 2022) (FSD 2021)
2. Explain nested if statement with its purpose, syntax, flow chart and suitable program example. (GRW 2021) (DGK 2021)

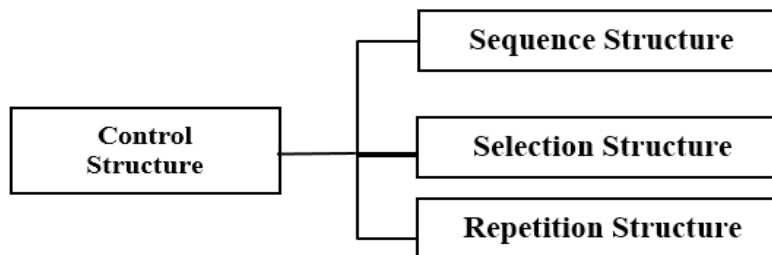
SHORT QUESTIONS

1. What is control structure? (DGK 2022) (FSD 2022) (SWL 2019)(K.B)
2. What is sequence structure? (K.B)
3. What is compound statement? (LHR 2022) (RWP 2019)(K.B)
4. What is selection statement? (K.B)
5. What is if statement? (K.B)

CONTROL STRUCTURE

“A Control structure is a statement used to control the flow of execution in a program or function.”

Control structure is used to combine individual instructions in to a single logical unit. This unit has one entry point and one exit point. Program logic is implemented with the help of control structures. Three kind of control structure are used to control the flow of execution of instruction.



- **Sequence Structure**
 - (i) In sequence structure the instruction of program executed one after the other in the order in which they are written.
 - (ii) It is also called the **default flow of the program**.
 - (iii) The program starts execution from the first instruction and all instruction executed one by one in a sequence.
- **Selection Structure**
 - (i) In selection structure the instructions of the program are divided into two or more groups and selected group of instruction execute.
 - (ii) This selection is done after evaluation of a certain condition.
- **Repetition Structure**
 - (i) Repetition structure is also called iteration structure or loop structure.
 - (ii) It is used to execute a statement or set of statement repeatedly as long as the given condition remains true.
 - (iii) This control structure is used to repeat same or similar work.

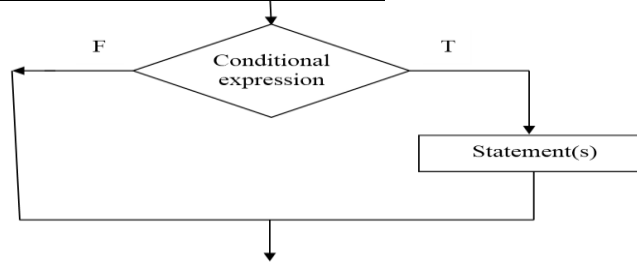
IF STATEMENT

- If is a keyword in C language. It is used to execute or ignore a statement or a set of statements by checking the condition.
- A condition is an expression that either evaluates to true (usually represented by 1) or false (represented by 0).

The syntax of if statement is**if (condition)**

```
{
    statement1;
    statement2;
    statement3;
    .
    .
    Statement;
}
```

If the condition is true then the statement(s) in the block of if statement are executed otherwise these are skipped and the control is transferred to next statement of the program. If there are more statements in if block then these should be enclosed in braces. However in case of a single statement the braces are optional.

The flow chart of if statement is as follows:**Example #1**

Write a program that print the square root of a positive number input by the user.

```
#include<stdio.h>
#include<math.h>
void main( )
{
    double n;
    printf("Please enter a number : ");
    scanf("%lf", &n);

    if(n > 0)
        printf("Square root of given number is = %lf", sqrt(n));
}
```

MULTIPLE CHOICE QUESTIONS**Q.No.1**

1. In if statement, false is represented by: (DGK 2022)

(A) 0	(E) 1
(C) 2	(D) 3
2. Which of the following is the simplest form of a decision structure? (LHR 2022)

(a) If statement	(b) Switch
(c) if else-ii	(d) Nested if
3. How many kinds of control structures are there to organize program instruction? (RWP 2022) (MTN 2021)

(A) 3	(B) 2
(C) 4	(D) 5

4. Which of the following statement is the simplest form of decision structure? (LHR 2022)
 (a) Switch (b) if statement
 (c) While loop (d) Nested if
5. The instructions are executed in the same order in which they are specified in the program. (DGK 2021)
 (a) Sequence structure (b) Selection structure
 (c) Loop (d) If statement

SHORT QUESTIONS**Q.No.2**

1. What is control structure? (DGK 2022) (FSD 2022) (SWL 2019) (K.B)

Ans: Control structures are statements used to control the flow of execution in a program or function. There are three types of control structures to control flow execution.

These are:

1. Sequence
2. Selection
3. Repetition.

2. What is sequence structure? (K.B)

Ans: In sequence structure the instruction are executed in the same order in which they are specified in the program. The default flow of program is sequential.

3. What is compound statement? (LHR 2022) (RWP 2019) (K.B)

Ans: A compound statement refers to a group of statements enclosed in opening and closing braces such as

```
{
    statement1;
    statement2;
    statement3;
    .
    .
    statementn; }
```

Control flows from statement₁ to statement_n in a logical sequence.

4. What is selection statement? (K.B)

Ans: A selection structure chooses which statement or a block of statements is to execute. There are two type selection statements in C. These are

- if-else
- switch

5. What is if statement? (K.B)

Ans: If is a keyword in C language. It is used to execute or ignore a statement or a set of statements by checking the condition. A condition is an expression that either evaluates to true (usually represented by 1) or false (represented by 0).

The syntax of if statement is
if(condition)

```
{ statement1;
  statement2;
  statement3;
  .
  .
  statementn; }
```

PREVIEW OF TODAY'S TOPICS

☞ Selection Structure (IF-ELSE Statement) & Nested if Statement

SELECTION STRUCTURE (IF-ELSE STATEMENT)**LONG QUESTION**

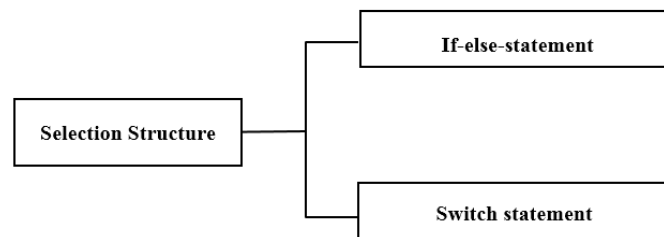
1. Define and explain if-else statement. (SWL 2021)

SHORT QUESTIONS

1. What is if-else statement? (Why if – else statement is used?) (SWL 2019)(U.B)
2. Write syntax if-else statement. (GRW 2022) (LHR 2018)(U.B)
3. Convert the following conditional expression into if-else statement.
 $x < 0 ? y = 10 : z = 20;$ (GRW 2019) (SGD 2019, 2021) (U.B)
4. Write a program that input a number from the user and print whether the given number is even or odd. (A.B)

SELECTION STRUCTURE

In selection structure, the instructions of the program are divided into two or more groups and selected group of instruction execute. This selection is done after evaluation of a certain condition.

**IF- ELSE**

If is a keyword in c language. If statement is used to make a decision whether a particular task will be performed or not. If we want to make a two-way decision, if-else statement is used. After evaluation of condition, one from two code blocks will be executed and the other will be skipped. We cannot execute or skip both code blocks.

If-else statement

If-else statement is another type of if statement. It is two-way decision making statement.

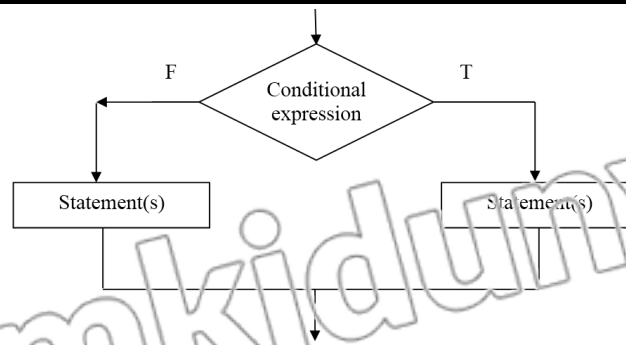
The general form of if-else statement is:

```

if(condition)
{
    block of if(true case),
}
else
{
    block of else(false case);
}
  
```

If the condition is true, the block of if statement is executed and if the condition is false the block of else is executed.

The flow chart of if-else statement is as follows:

**Example#1**

Write a program that input a number from the user and print whether the given number is even or odd.

```

#include<stdio.h>
void main( )
{
    int n;
    printf("Please enter a number : ");
    scanf("%d", &n);
    if (n % 2 == 0)
        printf("Number is even" );
    else
        printf("Number is odd" );
}
  
```

MULTIPLE CHOICE QUESTIONS**Q.No.1**

- Which statement is used for marking two way decision? (GRW 2018, 2021)
 - if
 - nested-if
 - while
 - if-else**
- Choose an alternative to the if-else statement from the following (SGD 2021)(LHR 2018)

Or

Conditional operator is an alternative of: (Answer; if-else) (GRW 2021)(SGD 2019)

 - Logical operator
 - Relational operator
 - Conditional operator**
 - Arithmetic operator
- Which keyword is used to specify two different choices with if statement: (LHR 2017)
 - Then
 - if
 - Else**
 - Case
- When the condition of if statement of if else statement is false, it has the value:
 - 0**
 - 1
 - 2
 - 3
- When the relational expression of if statement of if else statement is true, it has the value:
 - 1**
 - 0
 - 2
 - 6
- if else statement is a:
 - Single branching
 - Double branching**
 - Multiple branching
 - Non-branching

SHORT QUESTIONS

Q.No.2

1. What is if-else statement?

(SWL 2019)(K.B)

Ans:

If-else statement is another type of if statement. It is two-way decision making statement.

The general form of if-else statement is

```

if(condition)
  {
    block of if(true case);
  }
else
  {
    block of else(false case);
  }

```

If the condition is true the block of if statement is executed and if the condition is false the block of else is executed.

2. Write down the syntax of if-else statement.

(GRW 2022) (LHR 2018)(U.B)

Ans: Following are the syntax of if-else statement.

```

if(condition)
  {
    block of if(true case);
  }
else
  {
    block of else(false case);
  }

```

If the condition is true the block of if statement is executed and if the condition is false the block of else is executed.

3. Convert the following conditional expression into if-else statement.

(GRW 2019)(SGD 2019, 2021)(A.B)

$x < 0 ? y = 10 : z = 20 ;$

Ans: **if(x<0)**

y=10;

else

z=20;

4. Write a program that input a number from the user and print whether the given number is even or odd. (A.B)

Ans:

```

#include<stdio.h>
void main( )
{
  int n;
  printf(" Enter a number : ");
  scanf(" %d ", &n);
  if (n % 2 == 0)
    printf("Number is even" );
  else
    printf("Number is odd" );
}

```

NESTED IF STATEMENT**LONG QUESTIONS**

1. Explain nested if statement with its purpose, syntax, flow chart and suitable program example. (GRW 2021) (SWL 21.9)
2. Write a program that inputs three numbers and find the smallest number using nested if. (GRW 2022)(DGK 2022)
3. Write a program in C language that accept three from user and display the largest number using nested if (SWL 2022) (MTN 2022)

SHORT QUESTIONS

1. What is nested if statement? (GRW 2017)(K.B)
2. Write syntax nested if statement. (U.B)

NESTED IF STATEMENT:

“If's statement inside the body of another if statement is called nested if statement.”

Nested can be done up to any level. However, the increase in the level of nesting also increase the complexity of the nested if statement.

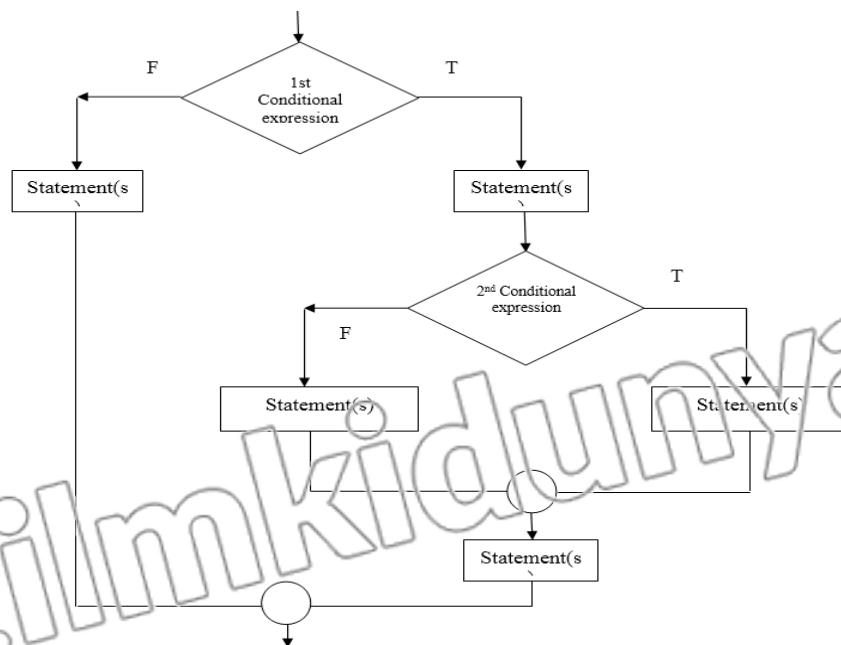
The syntax of nested if statement is as follows

```

if(condition)                                //outer if
{
    if(condition)                            //inner if
    {
        block of inner if
    }
}

```

The else statement is optional, it may or may not be used with outer of inner if statements. The flow chart of nested-if statement is as follows:

**Example#1**

Write a program that input three numbers form the user and displays the largest number.

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

```
#include<conio.h>

void main( )
{
    int a, b, c;
    clrscr();

    printf("Please enter three numbers ");
    scanf("%d %d %d ", &a, &b, &c);
    if( a > b )
    {
        if( a > c )
            printf("First number is largest ");
        else
            printf("Third number is largest ");
    }
    else
    {
        if( b > c )
            printf("Second number is largest ");
        else
            printf("Third number is largest ");
    }
    getch();
}
```

MULTIPLE CHOICE QUESTIONS

- Which statement means an if statement inside another if statement?
 - Nested if
 - Nested loop
 - Outer if
 - Sentinel loop
- Increase in the level of nesting is also increase in
 - Simplicity of the program
 - Complexity of the program
 - Understandability of the program
 - Reusability

SHORT QUESTIONS

- What is nested-if statement? (LHR 2017) (K.B)
Ans: If statement inside the body of another if statement is called nested if statement. Nesting can be done up to any level. However the increase in the level of nesting also increase the complexity of the nested if statement.

The syntax of nested if statement is as follows

```
if(condition) //outer if
{
    if(condition) //inner if
    {
        block of inner if
    }
}
```



```
}
```

The else statement is optional, it may or may not be used with outer of inner if statements.

2. Write down the syntax of nested if statement.

(U.B)

Ans: The syntax of nested if statement is as follows

```
if(condition) //outer if
{
    if(condition) //inner if
    {
        block of inner if
    }
}
```

LECTURE NO. 3

PREVIEW OF TODAY'S TOPICS

☞ If-else-if statement & Use of logical operators

IF-ELSE-IF STATEMENT & USE OF LOGICAL OPERATOR**LONG QUESTIONS**

1. Define "if-else-if" statement. Explain its working with syntax, Flowchart and example. (LHR 2021) (MTN 2021)
2. Write a program that inputs three numbers and displays the maximum number by using if else if statement. (LHR 2022)

SHORT QUESTIONS

1. What is if-else if statement? (K.B)
2. What are logical operators? (SWL 2021) (MTN 2021) (DGK 2021) (K.B)
3. Write down the syntax of if-else-if statement. (U.B)

IF-ELSE IF STATEMENT:

If there are more than three alternatives, then nested if statements can become quite complex. In such statements if statement with multiple alternatives if-else if can be a good choice.

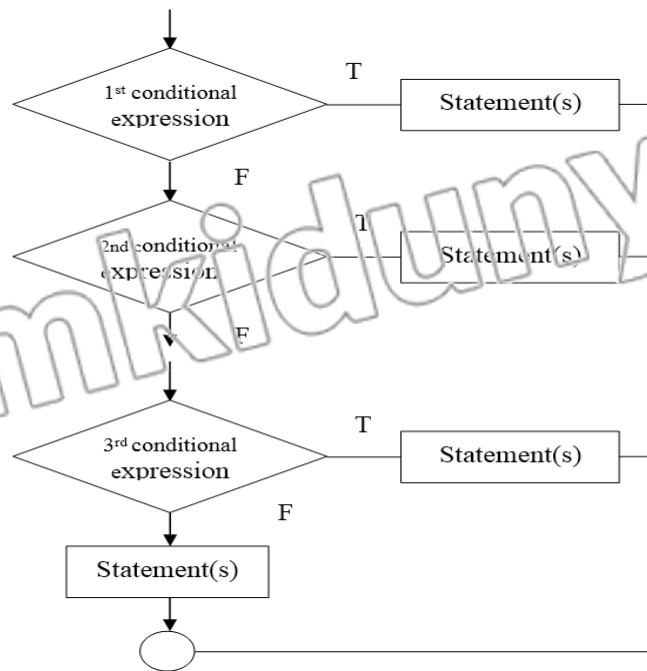
The syntax of if-else if statement is as follows.

```

if(condition1)
    statement1;
else if (condition2)
    statement2;
.
.
.
.
else if (conditionn)
    statementn;
else
    statementk;

```

The condition in if statement with multiple alternatives are executed in sequence until a true condition is reached, then the statements following is executed and rest of alternatives conditions are skipped. If all conditions are false then statements following the last else is executed. The flow chart of if-else if statement is as follows.

**Example #1**

Write a program that determines the given number is positive, negative or zero by using if-else if statement.

```

#include<stdio.h>
void main( )
{
    int n;
    printf("Please enter a number : ");
    scanf("%d ", &n);

    if( n > 0 )
        printf("The number is positive ");
    else if( n < 0 )
        printf("The number is negative ");
    else
        printf("The number is zero ");
}
  
```

USE OF LOGICAL OPERATOR

There are three logical operator AND (&&), OR (||), and NOT(!). These operators use to construct compound conditions to may be used with if statements.

Example #1

Write a program that input three numbers form the user and displays the largest number.

```

#include<stdio.h>
void main( )
{
  
```

```

    int a,b,c;
  
```

```
printf("Please enter three numbers ");
scanf("%d %d %d ", &a, &b, &c);
```

```
if (a>b && a>c)
    printf("First number is the largest");
else if (b>a && b>c)
    printf("Second number is the largest");
else
    printf("Third number is the largest");
}
```

MULTIPLE CHOICE QUESTIONS

- Which logical operator is used in C language? (RWP 2022)
 (a) / (b) +
 (c) && (d) *
- What does a compound condition use to join two conditions? (SGD 2019)
OR
Which of the following operators is used to make a compound condition?
 (a) Relational Operators (b) Relational Result
 (c) Logical Result (d) Logical operators
- Which of the following is not logical operator: (GRW 2018)
 (a) && (b) □
 (c) ! (d) > =
- An expression containing logical operators returns which of the following depending upon whether the expression true or false?
 (a) 0 (b) 1
 (c) 2 (d) Both (a) & (b)

SHORT QUESTIONS

- What is if-else if statement? (K.B)

Ans: If there are more than three alternatives then nested if statements can become quite complex. In such statements if statement with multiple alternatives if-else if can be a good choice.

The syntax of if-else if statement is as follows.

```
if(condition1)
    statement1;
else if (condition2)
    statement2;
.
.
.
else if (conditionn)
    statementn;
else
    statementk;
```

2. What are logical operators?

(SWL 2021) (MTN 2021) (DGK 2021) (K.B)

Ans: The three logical operators (AND, OR, and NOT) are represented by &&, ||, and ! respectively. These operators play an important role in constructing certain compound conditions to be used with if statement.

3. Write down the syntax of if-else-if statement.

(U.B)

Ans: The syntax of if-else-if statement is as follows.

```

if(condition1)
    statement1;
else if (condition2)
    statement2;
.
.
.
else if (conditionn)
    statementn;
else
    statementk;
  
```

LECTURE NO. 4

PREVIEW OF TODAY'S TOPICS

☞ Switch Statement, Conditional Operator

SWITCH STATEMENT, CONDITIONAL OPERATORS**LONG QUESTIONS**

1. Write a program that inputs a weekday number and prints the name of day on screen using switch structure. (MTN 2021) (GRW 2018)
2. Write a program that inputs a character and display whether it is vowel or not using switch statement. (FSD 2022)(RWP 2022) (SGD 2018)

SHORT QUESTIONS

1. What is meant by conditional operator? (RWP 2022) (LHR 2021) (U.B)
2. Write a program that input two numbers from the user and display the larger Number by using conditional operator. (A.B)
3. Write the syntax of "Switch" statement. (BWP 2022)(U.B)
4. Why break statement is used in a Switch () structure. (LHR 2021) (BWP 2019)(U.B)
5. What is the purpose of default statement n switch structure? (GRW 2019) (SGD 2018)(U.B)

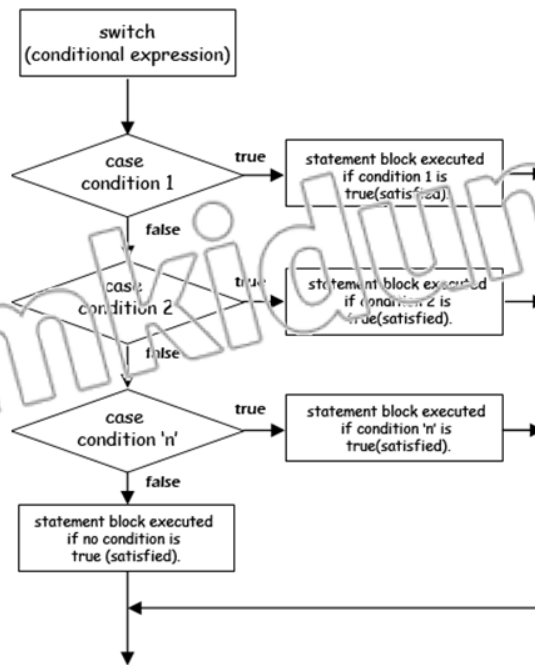
SWITCH STATEMENT:

Switch statement is a condition statement that compares the value of an expression against a list of cases. The case label and the value of expression must be integer or a character. It must not be a float or double value.

The syntax of switch statement is:

```
switch(expression)
{
    case val1:
        statement1;
        break;
    case val2:
        statement2;
        break;
    .
    .
    .
    case valn:
        statementn;
        break;
    default:
        statement;
}
```

FLOW CHART OF SWITCH STATEMENT

**CONDITIONAL OPERATORS:**

Conditional operator is a ternary operator. It requires three operands. It is also used as an alternative of if-else statement.

Its general form is

“Conditional expression? True-case statement: false-case statement;

The condition is a relational or logical statement. If the condition is true then the true-case statement will be executed otherwise the false-case statement is executed.

Example#1

Write a program that input two numbers from the user and display the larger number by using conditional operator.

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

```
void main()
```

```
{
```

```
    int n1, n2;
```

```
    printf("Please enter first number : ");
```

```
    scanf("%d", &n1);
```

```
    printf("Please enter second number : ");
```

```
    scanf("%d ", &n2);
```

```
    n1>n2 ? printf("%d is larger ",n1);printf("%d is larger ",n2);
```

```
}
```

MULTIPLE CHOICE QUESTIONS

Q111

1. Which of the given is valid case statement in a switch?

(a) Case I

(b) Case xcy:

(c) Case‘ab’

(d) Case2+5:

(SWL 2022)

2. The case block ends with: (MTN 2022) (LHR 2021) (BWP 2019) (SWL 2019)(SGD 2018)
 (a) End Select (b) End Case
 (c) Case Else (d) Break
3. Another term for conditional operator is:(FSD 2022) (BWP 2021, 2022) (GRW 2019)(GRV 2017)
 (a) Binary (b) Ternary
 (c) Byte (c) Iteration
4. Conditional operator is an alternative of: (CR V 2022),(FSD 2021, 2022)(SGD 2019)(LHR 2018)
 (a) if (b) if-else
 (c) switch (d) for
5. Conditional Operator takes: (GRW 2017)
 (a) One Operand (b) Two Operand
 (c) Three Operand (d) Four Operand
6. The value of expression of switch statement is compare to each which label?
 (a) Case (b) Break
 (c) Default (d) All of above

SHORT QUESTIONS

1. What is meant by conditional operator? (RWP 2022) (LHR 2021) (U.B)

Ans: Conditional operator is a ternary operator. It requires three operands. It is also used as an alternative of if-else statement. Its general form is

Conditional expression? True-case statement: false-case statement;

The condition is a relational or logical statement. If the condition is true then the true-case statement will be executed otherwise the false-case statement is executed.

2. Write a program that input two numbers from the user and display the larger number by using conditional operator. (A.B)

Ans: #include<stdio.h>
 void main()
 {

```

    int n1, n2;
    printf("please enter first number ");
    scanf("%d ", &n1);
    printf("please enter second number ");
    scanf("%d ", &n2);
    n1>n2 ? printf("%d is larger ", n1);printf("%d is larger ", n2);
  }

```

3. Write the syntax of "Switch" statement. (BWP 2022)(U.B)

Ans: Following are the syntax of switch statement.

The syntax of switch statement is:

```

switch(expression)
{
    case val1:
        statement1;
        break;
    case val2:

```



```

        statement2;
        break;
        .
        .
        .
    case valn:
        statementn;
        break;
    default:
        statement;
    }

```

4. Why break statement is used in a Switch () structure. (LHR 2021) (BWP 2019)(U.B)

Ans: In switch structure the value of expression is compared to each case label. The statements following the first label with a matching evaluated value are executed until a break statement is encountered. The break causes the rest of the switch statement to be skipped.

5. What is the purpose of default statement n switch structure?(GRW 2019) (SGD 2018)(U.B)

Ans: In switch structure the default label may be used to provide code to be executed if none of the case label is matched. However, the position of default is not fixed. It may be placed before the first case statement of after the last case.

STUDENTS LEARNING OBJECTIVES (SLOs)

MULTIPLE CHOICE QUESTIONS

Knowledge Based Questions

(i) Which Structure are statements that control the flow of execution in a program?

- (a) Sequence (b) Loop
(c) Selection (d) Control Structures

(ii) Which of the following control structure used for comparison?

- (a) Sequence (b) Selection
(c) Repetition (d) None

(iii) Which of the following is a conditional statement?

- (a) goto (b) Switch
(c) String (d) None of these

(iv) The value of expression in switch statement must not be a _____ or _____ value.

- (a) int – float (b) integer – character
(c) float – Double (d) None of these

(v) How many basic selection statements in C language?

- (a) 2 (b) 3
(c) 4 (d) 6

Understanding Based Questions

(i) In which statement, instructions are enclosed in opening and closing braces?

- (a) Comments (b) For Loop
(c) String (d) Compound

(ii) Which of the following operator is used to construct compound condition?

- (a) Arithmetic operator (b) Relational operator
(c) Logical operator (d) Binary operator

(iii) When the condition of if statement is false, it has the value.

- (a) 0 (b) 1
(c) 2 (d) None of these

(iv) The switch statement is especially useful when the selection is based on the:

- (a) Operator (b) Break
(c) Value (d) All of above

(v) If the expression of conditional operator is true then the statement after the which symbol is executed?

- (a) : (b) ?
(c) ; (d) @

Application Based Questions

(i) Which is an expression that either evaluates to true or false?

- (a) Bug (b) Escape sequence
(c) Condition (d) ASCII code

(ii) Which of the following are valid case in switch?

- (a) case 1: (b) case x < 4:
(c) case 'ab'

(iii) The diamond symbol indicates:

- (a) Progress (b) Input
(c) Output (d) Condition

(iv) The last statement is use to move case block in switch () structure must be:

- (a) Default (b) if-else
 (c) Break (d) else
- (v) What will be the output of: `(6>7)? printf("ABC"); printf("XYZ");`
 (a) ABC (b) XYZ
 (c) ABSXYZ (d) XYZABC
- (vi) A type of operator that works with one operand is called:
 (a) Binary operator (b) Unary operator
 (c) Ternary operator (d) Relational operator

SHORT QUESTIONS

Knowledge Based Questions

Q1. What is control structure?

Ans: Control structures are statements used to control the flow of execution in a program or function. There are three types of control structures to control flow execution. These are

- i. Sequence
- ii. Selection
- iii. Repetition.

Q2. What is compound statement?

Ans: A compound statement refers to a group of statements enclosed in opening and closing braces such as

```
{
    statement1;
    statement2;
    statement3;
    .
    .
    .
    Statement;
}
```

Where the control flows from statement₁ to statement in a logical sequence.

Q3. What is selection statement?

Ans: A selection structure chooses which statement or a block of statements is to execute. There are two type selection statements in C. These are

- i. if-else
- ii. switch

Q4. What is if statement?

Ans: If is a keyword in C language. It is used to execute or ignore a statement or a set of statements by checking the condition. A condition is an expression that either evaluates to true (usually represented by 1) or false (represented by 0).

The syntax of if statement is
If (condition)

```
{
    statement1;
    statement2;
    statement3;
    .
    .
    .
}
```

Statement;

}

Q5. What is if-else statement?

If-else statement is another type of if statement. It is two way decision making statement.

The general form of if-else statement is

if (condition)

{

Block of if (true case);

}

else

{

Block of else (false case);

}

If the condition is true the block of if statement is executed and if the condition is false the block of else is executed.

Understanding Based Questions

Q1. Explain the comparison of nested if and sequence of ifs statements.

Ans: Comparison of nested-if and sequence of ifs statements:

The sequence of if statements is simpler than nested if statement. That is why the beginner usually prefer to use a sequence of if statements. However sometimes it is useful to use a nested if instead of sequence of ifs. In nested if statement when the control flow reaches a logical decision the rest of the conditions are skipped whereas in a sequences of if statements all conditions are tested in any case.

Q2. Why break statement is used in a Switch () structure.

Ans: In switch structure the value of expression is compared to each case label. The statements following the first label with a matching evaluated value are executed until a break statement is encountered. The break causes the rest of the switch statement to be skipped.

Q3. Why “default” case is used in switch statement?

Ans: A default label may be used to provide code to be executed if none of the case label is matched.

Q4. Write down the syntax of conditional operator?

Ans: Conditional expression? **True-case statement: false-case statement;**

Q5. Assuming x is 10.0 and y is 15.0 what are the values of the following conditions:

a) $x \neq y$

b) $x < x$

c) $x >= y - x$

d) $x == y + x - y$

[Hint The value of a true condition is 1 and a false condition is 0]

Ans: Result of above conditions is

a) 1

b) 0

c) 1

d) 1

Application Based Questions

Q.1 Write an expression to test each of the following relationships

a) age is from 18 to 25

b) temperature is less than 40.0 and greater than 25.0

- c) year is divisible by 4 [Hint use %]
- d) speed is not greater than 80
- e) y is greater than x and less than z
- f) w is either equal to 6 or not greater than 3.

Note: The bold face words represent variables' names

Ans: Expression of above statements.

- a) `age >= 18 && age < -25`
- b) `temperature < 40.0 && temperature > 25`
- c) `year % 4 == 0`
- d) `!(speed > 80)`
- e) `y > x && y < z`
- f) `w == 6 || !(w > 3)`

Q.2 What will be output of the following.

```
int x=5, y=10;
if(x>y)
y=2;
y=y+1;
printf("value of y=%d", y);
```

Ans: output:
value of y=11

Q.3 Trace output of the following program.

```
int a=4, b=2, c=5;
if (a > b)
a=5;
if( c = a)
a = 6;
else
a = 7;
printf("%d", a);
```

Ans: 6

Q.4 Find the errors in the given code.

```
void main()
{
int a=2;
if ( a=1 )
printf("OK");
else
printf("cancel");
getch();
}
```

Ans: Error: Declaration syntax error
a is assigned a value that is never used

Q.5 Trace the error.

```
Int x=5
Int y=4
If (x<y)
x++;
```

Ans: Int x=3;
 Int y=4;
 If (x<y)
 x++;

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