

Answer the following questions:

1. **What do you understand by looping? Which are the looping statements in QBasic?**

Answer:

The process of repeating a series of statements as many times as needed.

Loop control variable: A variable used to determine whether a loop will be executed.

Loop body: The statement that are executed each time a loop repeats. These loops are used to have a task repeated a specific number of times.

Looping statements include: Do. while, for. next, while. Wend

2. **Differentiate between DO While and Do Until loops with an example.**

Answer:

"Do While" loop statement runs while a logical expression is true. This means that as long as your expression stays true, your program will keep on running. Once the expression is false, your program stops running. A "Do Until" loop statement runs until a logical statement is true.

3. **What do you understand by nested loops?**

Answer:

The placing of one loop inside the body of another loop is called nesting. When you "nest" two loops, the outer loop takes control of the number of complete repetitions of the inner loop. While all types of loops may be nested, the most commonly nested loops are for loops.

4. **Explain the working of the EXIT statements in the FOR. Next loop.**

Answer:

The EXIT statements is used to exit from a loop before the loop comes to an end on its own. For this, we use the EXIT command, followed by either FOR or DO.

It works only with DO-Loop and FOR-NEXT Loops. It does not work with WHILE-WEND.

5. **What is the function of GOSUB statements?**

Answer:

The GOSUB statement transfers control to the line with the specified statement label, where the program sequentially proceeds until it reaches a RETURN statement.

Statement labels as described in Format, Data and Expressions. An expression evaluating to a numeric value.

Lab Work:

1. Write a program to display the following series of numbers.

100, 97, 94, 91,, 4, 1

Program:

```
CLS
DIM I as Integer
FOR I = 100 TO 1 STEP-3
PRINT I
NEXT I
END
```

2. Write a program to display the following series of numbers.

10, 20, 30,, 100

Program:

```
CLS
DIM I as Integer
FOR I = 10 TO 100 STEP 10
PRINT I
NEXT I
END
```

3. Write a program to generate multiplication table of any number input by the user.

Program:

```
CLS
Dim n as Integer
INPUT "Enter a Number: ", n
FOR i = 1 TO 10
PRINT n;" * ";i;" = ";n*i
NEXT i
END
```

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4. Write a program to enter 10 numbers and calculate their sum and product.

Program:

```
CLS
DIM I, p, num as Integer
LET sum=0
LET p=1
FOR I = 1 TO 10
    PRINT "Enter any number"
    INPUT num
    sum=sum + num
    P=p*num
NEXT I
PRINT sum
PRINT p
END
```

5. Write a program to take in 10 numbers from a user and display a count of negative numbers entered by the user.

Program:

```
CLS
Dim count=0, I, num
For I=1 to 10
    Print "Enter any number"
    Input num
    If num<0 Then
        Count = Count + 1
    End IF
Next I
Print Count
End
```



A. Multiple Choice Questions

- Which value is optional and can either be positive or negative?
 (a) FOR (b) STEP (c) NEXT
- How many maximum loops can be used in a program?
 (a) 8 (b) 9 (c) 10
- The default value of the step value is :
 (a) 0 (b) - 1 (c) 1
- The Loop forming statements are :
 (a) DO... LOOP
 (b) WHILE...WEND
 (c) both of these
- An UNTIL condition continues the loop until :
 (a) the condition becomes false
 (b) the condition becomes true
 (c) exit manually

B. Fill in the blanks.

- WEND statement shifts the control back to WHILE statement.
- The step value in the FOR... NEXT loop is optional.
- The DO WHILE... LOOP executes the loop when the condition is True.
- The GOSUB enables us to jump to a certain position in a program.
- The EXIT command does not work with while ... wend

C. State True or False.

- Looping technique reduces the number of instructions. True
- The same control variable can be used in different loops. false
- WEND clause is used with FOR statement. false
- Step value can never be negative. false
- In nested loop, the outermost loop will be executed first, before the inner loop. false



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Write one word for the following.

1. Executing the same code multiple times
2. Its value changes every time the loop body gets executed.
3. This command is same as GOTO.
4. A loop within another loop

Looping
control variable
GOSUB - RETURN
Nested loop

Answer the following questions.

1. What is a loop? Which are the looping statements in QBasic?