Chapter 5

A. Multiple Choice Questions

1. A
2. B
3. A
4. D
5. 6
6. D
7. B
8. B
9. A
10. B

B. True or False

1. True
2. False
3. False
4. False
5. True
6. True
7. False
8. False
9. True
10. False

C.

1. There are two types controlled statements supported by python i.e. for loop (Count controlled loop) and while loop (condition controlled loop) statements.

Syntax of while loop

```
while expression:
       Loop Body
       Statement(s)
```

Syntax of for loop

```
for variable in sequence(s):
           Statement(s)
```

Statements(S)

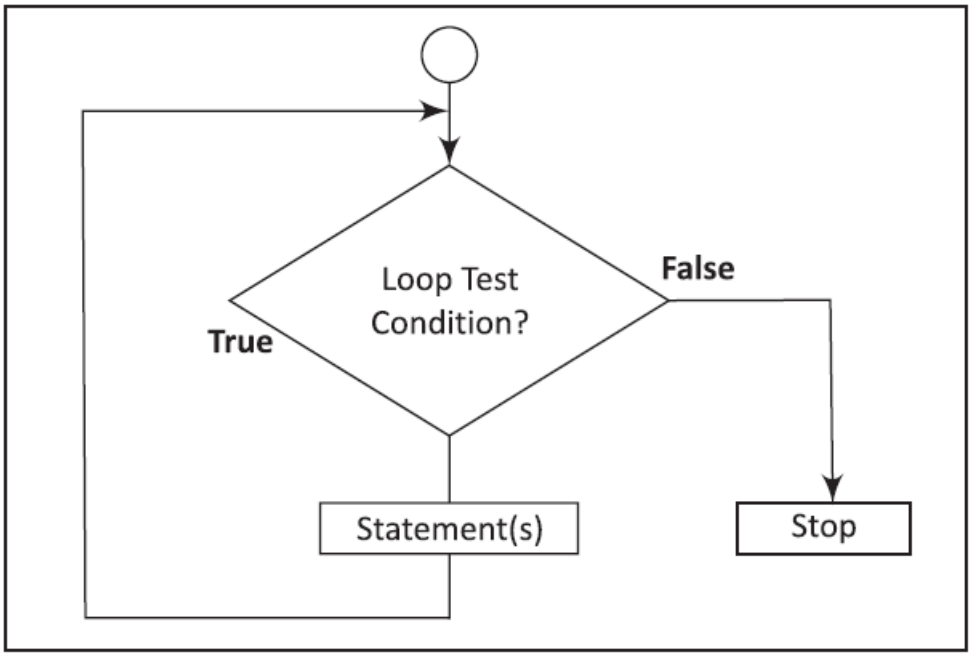
2.

While loop is condition controlled loop. The syntax of while loop is as follows

Syntax of while loop

```
while expression:
        Loop Body
         Statement(s)
```

While loop executes the statements as long as the test condition is true. When the condition is false, the execution will be completed and control goes out of the loop. The flow chart of while is as follows.



Flow Chart of While Loop

3. Loop will run forever known as infinite loop.
4. Loops within Loops are said to be nested loops. Example of nested loop is as follows

5.

a. Indentation of statement following while statement is incorrect.
b. Colon missing at the end of the for statement

6. Yes, programmer can nest while loop within for loop. Consider example where we have 'n. numbers and we have to compute factorial of a number starting from 0 to n. The example of while loop within for loop is as follows

```
for x in range(1,7):
      fact =1
      while(x>1):
          fact = fact * x
           x = x - 1
      print(fact)
```

7. The keyword break is used when programmer wants to terminate from the loop. Thus, when the break statement is encountered inside a loop, the loop is immediately terminated and program control automatically goes to the first statement following the loop.

8. The continue statement is used by the programmer when programmer wants to skip the current iteration and go for the next iteration.

9.

```
i = 50
while i > 0:
    print(i,end=' ')
    i -= 2
```

10. The 'a' program will execute for 10 times and output of the program is 110. Whereas 'b' will be executed for 4 times and output of the program in 68.

11.

```
s = 0
for x in  range(0,50,7):
   if x % 7 == 0:
        s = s + x
```

```
print(s)
Output
196
```

D.

1.

```
n = int(input('Enter the numbers of powers of 5 to be displayed:'))
for x in range(n):
        print(5**x)

Output
Enter the numbers of powers of 5 to be displayed:5
1
5
25
125
625
```

2.

```
n = int(input('Enter the numbers of powers of 5 to be displayed:'))
for x in range(n):
    print(5**x)

Output
Kilograms   Grams
1            1000
2            2000
3            3000
```

3.

```
n=int(input('Enter the number upto which you want to display square of a
number:'))
for x in range(1,n+1):
    if x == n:
        print(x**2)
    else:
        print(x**2,end=',')


Output
Enter the number up to which you want to display square of a number:10
1,4,9,16,25,36,49,64,81,100
```

4.

```
sum = 0
```

```
for x in range(0,501,5):
    if( x % 5 == 0):
        sum += x
print(' Sum =',sum)

 Output
 Sum = 25250
```

5.

```
n =int(input('Enter the number:'))
num = n
count = 0
while n > 0:
    n = n//10
    count =  count + 1
print(' The Number of Digits in ',num,'are ',count)
Output
Enter the number:65378
The Number of Digits in  65378 are  5
```

6.

```
saved_pass = 'Python'
attempts =  0
while attempts!=3:
    passwd = input('Please Enter the Password:')
    if saved_pass!= passwd:
        print(' Wrong one!! Please enter it once')
        attempts = attempts + 1
    else:
        print(' Welcome to Python Programming ')
        break

if attempts >=3:
    print('You have Crossed the Limits of Entering Password')

 Output
 Please Enter the Password:qwep
  Wrong one!! Please enter it once
 Please Enter the Password:puty
  Wrong one!! Please enter it once
 Please Enter the Password:Python
  Welcome to Python Programming
```

7.

```
n = int(input('Enter the value of n:'))
x = int(input('Enter the value of x:'))
temp = 0
sum1 = 0
```

```
while (temp<=n):
    sum1 = sum1 + x**temp
    temp = temp + 1
print(sum1)

Output
 Enter the value of n:2
Enter the value of x:5
31
```

8.

```
Sum1 = 0
for x in range(0,7):
        print('Day: ',x+1)
        for y in range(0,5):
                print('Chocolate No: ',y+1)
                n = int(input('Enter the cost of chocolate:'))
                sum1 = sum1 + n;
print(' Bill to be paid = :',sum1)

Output
Day:  1
Chocolate No:  1
Enter the cost of chocolate:1
Chocolate No:  2
Enter the cost of chocolate:2
Chocolate No:  3
Enter the cost of chocolate:3
Chocolate No:  4
Enter the cost of chocolate:4
Chocolate No:  5
Enter the cost of chocolate:5
Day:  2
Chocolate No:  1
Enter the cost of chocolate:1
Chocolate No:  2
Enter the cost of chocolate:2
Chocolate No:  3
Enter the cost of chocolate:3
Chocolate No:  4
Enter the cost of chocolate:4
Chocolate No:  5
Enter the cost of chocolate:5
Day:  3
Chocolate No:  1
Enter the cost of chocolate:1
Chocolate No:  2
Enter the cost of chocolate:2
```

```
Chocolate No:  3
Enter the cost of chocolate:3
Chocolate No:  4
Enter the cost of chocolate:4
Chocolate No:  5
Enter the cost of chocolate:5
Day:  4
Chocolate No:  1
Enter the cost of chocolate:1
Chocolate No:  2
Enter the cost of chocolate:2
Chocolate No:  3
Enter the cost of chocolate:3
Chocolate No:  4
Enter the cost of chocolate:4
Chocolate No:  5
Enter the cost of chocolate:5
Day:  5
Chocolate No:  1
Enter the cost of chocolate:1
Chocolate No:  2
Enter the cost of chocolate:2
Chocolate No:  3
Enter the cost of chocolate:3
Chocolate No:  4
Enter the cost of chocolate:4
Chocolate No:  5
Enter the cost of chocolate:5
Day:  6
Chocolate No:  1
Enter the cost of chocolate:1
Chocolate No:  2
Enter the cost of chocolate:2
Chocolate No:  3
Enter the cost of chocolate:3
Chocolate No:  4
Enter the cost of chocolate:4
Chocolate No:  5
Enter the cost of chocolate:5
Day:  7
Chocolate No:  1
Enter the cost of chocolate:1
Chocolate No:  2
Enter the cost of chocolate:2
Chocolate No:  3
Enter the cost of chocolate:3
Chocolate No:  4
Enter the cost of chocolate:4
Chocolate No:  5
Enter the cost of chocolate:5
 Bill to be paid = : 105
```