**40 Basic Questions on Functions and While Loop in Python**

**Functions – 20 Questions**

1. What is a function in Python?

       Function is a block used to write the reusable code(making it repetitive and    readable)

1. How do you define a function in Python?

We define function in python using -> def

def welcome():

     print(“hi,welcome”)

1. How do you call a function in Python?

To call a function in python we write the function name which we used while defining.

Ex:  def welcome():

              print(“hi,welcome”)

         welcome()

1. What is the purpose of the `return` statement?

Return statement is used to get any value i.e result, it is used to send the result back to the caller

1. Write a function to add two numbers and return the result.

def add(a,b):

     return a+b

print(add(5,10))

o/p: 15

1. What is the difference between parameters and arguments?

Arguments are the values that ae passed while calling the function

Parameters are variables which we write or pass while defining a function

1. What happens if you define a function but never call it?

Only if function is defined, nothing happens until function is called, nothing is printed(no operation performed)

1. Write a function to check if a number is even or odd.

def  is\_even(n):

     if n%2 ==0 :

        return "even"

     else:

        return "odd"

print(is\_even(80))

o/p:even

1. What is a default argument in a function? Give an example.

Default argument in function means it is a default parameter which has a default value, if the caller does not enter value for it, default value is used in that case.

def greet(name="Abhi"):

    print("hello",name)

greet()

greet("Bhumi")

o/p:hello Abhi

       hello Bhumi

1. What is a keyword argument?

When we pass arguments to function by explicitly naming parameter using like key=value

key(parameter)

def student(name, age):

    print(f"Name: {name}, Age: {age}")

student(age=21, name="Abhi")

o/p: Name: Abhi, Age: 21

1. Write a function with a default argument.

def greet(name="Abhi"):

    print("hello",name)

greet()

greet("Bhumi")

o/p:hello Abhi

       hello Bhumi

1. Write a function that returns the square of a number.

def square(n):

      return n\*n

print(square(10))

o/p:100

1. Can a function return multiple values? Give an example.

Yes.

def person():

    return "Abhi", 25

1. What is the difference between `print()` and `return` inside a function?

print()-displays the output

Return - it sends the result back to the caller.

1. What is a global variable?

Global variable is a variable defined outside the function making it easily accessible anywhere in the program

1. What is a local variable inside a function?

It is a variable declared inside the function and only be accessible within that function.

1. Write a function that accepts name and age and prints them.

def person(name, age):

    print(f"Name: {name}, Age: {age}")

1. What is the use of the `pass` statement in a function?

Pass acts as a placeholder for code, that need be written later.

def num():

     pass

1. Write a lambda function to multiply two numbers.

1. Write a function that calculates the factorial of a number using recursion.

def factorial(n):

   if n==0:

      return 1

   else:

      return n\* factorial(n-1)

Or def factorial(n):

       return 1 if n == 0 else n \* factorial(n - 1)

**While Loop – 20 Questions**

1. What is a while loop?

While loop(control structure) checks the condition first whether it is true or false and then executes the block of code.

1. Write a while loop that prints numbers from 1 to 5.

a=1

while a<=5:

     print(a)

     a=a+1

1. What is an infinite while loop?

It is a loop that never stops if  its condition never becomes false.

1. How do you stop an infinite while loop?

We can stop an infinite loop by using a break statement

1. Write a while loop to print even numbers between 1 and 10.

i = 2

while i <= 10:

    print(i)

    i += 2

1. What is the difference between `for` and `while` loops?

While:loop is used when we have a condition.

For: is a loop used when we know how many times to run or iterate.

1. How do you use a break statement in a while loop?

a = 1

while True:

    if a > 5:

        break

    print(i)

    a += 1

1. How do you use a continue statement in a while loop?

a = 0

while a < 6:

    a += 1

    if a == 3:

        continue

    print(a)

1. Write a program to sum numbers from 1 to 100 using a while loop.

x=1

sum=0

while x<=100:

    sum=sum+x

    x=x+1

print(sum)

o/p:5050

1. Write a while loop that asks the user for input until they type “exit”.

while True:

    input = input("Enter text (type 'exit' to quit the loop): ")

    if input == "exit":

        break

1. What is the purpose of initializing a variable before a while loop?

Initializing helps to avoid infinite loops, to set a condition in  while loop

1. Write a while loop to print the multiplication table of 5.

m=1

while m<=10:

    print(f"5 X {m} = {5 \* m}")

    m=m+1

1. What happens if the condition of a while loop is always true?

It gives or leads to an infinite loop

1. How can you create a countdown from 10 to 1 using a while loop?

i = 10

while i > 0:

    print(i)

    i -= 1

1. Write a while loop that prints only odd numbers from 1 to 20.

o=1

while o<=20:

    print(o)

    o=o+2

1. Can you use else with a while loop? Give an example.

We can only use else in while loop when loop does not end by break

Ex:

i = 1

while i <= 5:

    print(i)

    i += 1

else:

    print("ok")

1. Write a while loop to reverse a number (e.g., input 123, output 321).

n = 12345

rev = 0

while n > 0:

    rev = rev \* 10 + n % 10

    n =n/ 10

print(rev)

1. What is the importance of updating the condition inside a while loop?

Updating condition is important to end the loop ,avoids infinite execution.

1. Write a while loop that calculates the factorial of a number.

n = 10

fact = 1

while n > 0:

    fact =fact\*n

    n =n- 1

print(fact)

o/p:24

1. Write a program using while loop to check if a number is a palindrome.

num = 121

temp = num

rev = 0

while temp > 0:

    rev = rev \* 10 + temp % 10

    temp //= 10

print("Palindrome" if rev == num else "Not Palindrome")