Python Worksheet 1

1. Which of the following operators is used to calculate remainder in a division?

A) # B) &

C) % D) $

Ans: C

2. In python 2//3 is equal to?

A) 0.666 B) 0

C) 1 D) 0.67

Ans: B

3. In python, 6<<2 is equal to?

A) 36 B) 10

C) 24 D) 45

Ans: C

4. In python, 6&2 will give which of the following as output?

A) 2 B) True

C) False D) 0
Ans: A

5. In python, 6|2 will give which of the following as output?

A) 2 B) 4

C) 0 D) 6

Ans: 6

6. What does the finally keyword denotes in python?

A) It is used to mark the end of the code

B) It encloses the lines of code which will be executed if any error occurs while executing the lines of code in

the try block.

C) the finally block will be executed no matter if the try block raises an error or not.

D) None of the above
Ans: C

7. What does raise keyword is used for in python?

A) It is used to raise an exception. B) It is used to define lambda function

C) it's not a keyword in python. D) None of the above

Ans: A

8. Which of the following is a common use case of yield keyword in python?

A) in defining an iterator B) while defining a lambda function

C) in defining a generator D) in for loop

Ans: C

9. Which of the following are the valid variable names?

A) _abc B) 1abc

C) abc2 D) None of the above

Ans: A and C

10. Which of the following are the keywords in python?

A) yield B) raise

C) look-in D) all of the above

Ans: A and B

11. Write a python program to find the factorial of a number.

```
def factorial(n):
    if n == 0:
        return 1
    else:
        return n * factorial(n-1)
num = int(input("Enter a number: "))
if num < 0:
    print("Factorial cannot be calculated for negative numbers.")
elif num == 0:
    print("The factorial of 0 is 1.")
else:
    result = factorial(num)
    print("The factorial of", num, "is", result)
```

12. Write a python program to find whether a number is prime or composite.

```
def is_prime(number):
    if number < 2:
        return False
```

```
    for i in range(2, int(number ** 0.5) + 1):
        if number % i == 0:
            return False
    return True

num = int(input("Enter a number: "))

if is_prime(num):
    print(num, "is a prime number.")
else:
    print(num, "is a composite number.")
```

13. Write a python program to check whether a given string is palindrome or not.

```
def is_palindrome(string):
    string = string.replace(" ", "").lower()
    # Reverse the string
    reverse_string = string[::-1]
    if string == reverse_string:
        return True
    else:
        return False
text = input("Enter a string: ")

if is_palindrome(text):
    print("The string is a palindrome.")
else:
    print("The string is not a palindrome.")
```

14. Write a Python program to get the third side of right-angled triangle from two given sides.

```
import math

def calculate_third_side(side1, side2):
    # Calculate the square of side1 and side2
```

```
    side1_squared = side1 ** 2
    side2_squared = side2 ** 2
    # Calculate the square of the third side
    third_side_squared = side1_squared + side2_squared
    # Calculate the square root of the third side
    third_side = math.sqrt(third_side_squared)
    return third_side

# Take input from the user
side1 = float(input("Enter the length of the first side: "))
side2 = float(input("Enter the length of the second side: "))

third_side = calculate_third_side(side1, side2)

print("The length of the third side is:", third_side)
```

15. Write a python program to print the frequency of each of the characters present in a given string

```
def count_characters(string):
    # Create an empty dictionary to store the character frequencies
    char_frequency = {}

    # Iterate over each character in the string
    for char in string:
        # Check if the character is already in the dictionary
        if char in char_frequency:
            # Increment the frequency count for the character
            char_frequency[char] += 1
        else:
            # Add the character to the dictionary with frequency 1
            char_frequency[char] = 1

    # Print the character frequencies
```

```
    for char, frequency in char_frequency.items():
        print(f"Character '{char}' occurs {frequency} times")

# Take input from the user
string = input("Enter a string: ")

# Call the function to count the character frequencies
count_characters(string)
```