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) 0

3. In python, 6<<2 is equal to?
   A) 36
   B) 10
   C) 24
   D) 45
   Ans:- C) 24

4. In python, 6&2 will give which of the following as output?
   A) 2
   B) True
   C) False
   D) 0
   Ans:- A) 2

5. In python, 6|2 will give which of the following as output?
   A) 2
   B) 4
   C) 0
   D) 6
   Ans:- D) 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) the finally block will be executed no matter if the try block raises an error or not.

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) It is used to raise an exception.

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) in defining a generator

9. Which of the following are the valid variable names?
   A) _abc
   B) 1abc
   C) abc2
   D) None of the above
   Ans:- A) _abc and C) abc2

10. Which of the following are the keywords in python?
    A) yield
    B) raise
    C) look-in
    D) all of the above
    Ans:- A) yield & B) raise

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

```
def fact(n):
    if n < 0:
        return "Factorial is not defined for negative numbers."
    result = 1
    for i in range(1, n + 1):
        result *= i
    return result

# Input from user
num = int(input("Enter a number: "))
print(f"The factorial of {num} is {fact(num)}")
```

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

```
def is_prime(n):
    if n <= 1:
        return False  # 0 and 1 are not prime numbers
    for i in range(2, int(n**0.5) + 1):
        if n % i == 0:
            return False  # n is divisible by i, so it's composite
    return True  # n is prime

# Input from user
num = int(input("Enter a number: "))

if is_prime(num):
    print(f"{num} is a prime number.")
else:
    if num > 1:
        print(f"{num} is a composite number.")
    else:
        print(f"{num} is neither prime nor composite.")
```

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

```
# function which return reverse of a string

def isPalindrome(s):
    return s == s[::-1]


# Driver code
s = "malayalam"
ans = isPalindrome(s)

if ans:
    print("Yes")
else:
    print("No")
```

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

```
import math

def calculate_third_side(side1, side2):
    # Calculate the hypotenuse (c) using Pythagorean theorem
    hypotenuse = math.sqrt(side1**2 + side2**2)
    return hypotenuse

# Input from 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(f"The length of the hypotenuse (third side) is: {third_side:.2f}")
```

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

```
def character_frequency(input_string):
    # Create an empty dictionary to store character frequencies
    frequency = {}
```

```
    # Iterate through each character in the string
    for char in input_string:
        if char in frequency:
            frequency[char] += 1  # Increment the count if the character is already in the dictionary
        else:
            frequency[char] = 1  # Initialize the count if it's the first occurrence of the character

    return frequency

# Input from user
input_string = input("Enter a string: ")

# Get the character frequency
frequency_dict = character_frequency(input_string)

# Print the frequency of each character
print("Character frequency:")
for char, count in frequency_dict.items():
    print(f"'{char}': {count}")
```