# PYTHON – WORKSHEET 1

**Q1 to Q8 have only one correct answer. Choose the correct option to answer your question.**

1. Which of the following operators is used to calculate remainder in a division?
   A) # B) &
   C) % D) $
2. In python 2//3 is equal to?
   A) 0.666 B) 0
   C) 1 D) 0.67
3. In python, 6<<2 is equal to?
   A) 36 B) 10
   C) 24 D) 45
4. In python, 6&2 will give which of the following as output?
   A) 2 B) True
   C) False D) 0
5. In python, 6|2 will give which of the following as output?
   A) 2 B) 4
   C) 0 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
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
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.

**Q9 and Q10 have multiple correct answers. Choose all the correct options to answer your question.**

9. Which of the following are the valid variable names?
   A) _abc B) 1abc
   C) abc2 D) None of the above
10. Which of the following are the keywords in python?
    A) yield B) raise
    C) look-in D) all of the above

**Q11 to Q15 are programming questions. Answer them in Jupyter Notebook.**

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

```
def factorial(n):
    if n == 0 or n == 1:
        return 1
    else:
        return n * factorial(n - 1)

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

# Checking if the number is non-negative
if num < 0:
    print("Factorial is not defined for negative numbers.")
else:
    result = factorial(num)
    print("The factorial of", num, "is", result)
```

```
Enter a number: 7
The factorial of 7 is 5040
```

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

```
def is_prime(num):
    if num <= 1:
        return False

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

    return True

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

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

```
Enter a number: 56
56 is a composite number.
```

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

```
def is_palindrome(string):
    # Removing whitespace and converting to lowercase
    string = string.replace(" ", "").lower()

    # Reversing the string
    reversed_string = string[::-1]

    # Comparing the original and reversed string
    if string == reversed_string:
        return True
    else:
        return False

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

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

```
Enter a string: RADAR
The string is a palindrome.
```

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

```
import math

def get_third_side(side1, side2):
    third_side = math.sqrt(side1**2 + side2**2)
    return third_side

# Taking 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 = get_third_side(side1, side2)
print("The length of the third side is:", third_side)
```

```
Enter the length of the first side: 5
Enter the length of the second side: 6
The length of the third side is: 7.810249675906654
```

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

```
def character_frequency(string):
    frequency = {}

    for char in string:
        if char in frequency:
            frequency[char] += 1
        else:
            frequency[char] = 1

    return frequency

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

frequency = character_frequency(string)

print("Character frequencies:")
for char, count in frequency.items():
    print(char, ":", count)
```

```
Enter a string: Data Trained
Character frequencies:
D : 1
a : 3
t : 1
  : 1
T : 1
r : 1
i : 1
n : 1
e : 1
d : 1
```