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) $

   Answer:
   C)

2. In python 2//3 is equal to?
   A) 0.666 B) 0
   C) 1 D) 0.67

   Answer:

   B) 0

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

   Answer:
   C) 24

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

   Answer:
   A) 2

5. In python, 6|2 will give which of the following as output?
   A) 2 B) 4
   C) 0 D) 6

   Answer:
   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

   Answer:
   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

   Answer:
   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.

   Answer:
   C) in defining a generator

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

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

   Answer:
   A) & B)

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)


num = int(input("Enter a number"))
if num<0:
    print("Factorial doesn't exist for negative numbers.")
else:
        print(f"the factorial of {num} is{factorial(num)}.")
```

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

def main():
    number = int(input("Enter a number: "))
    if is_prime(number):
        print(f"{number} is a prime number.")
    else:
        print(f"{number} is a composite number.")

if __name__ == "__main__":
        main()
```

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

```
def is_palindrome(s):
        normalized_str = ''.join(s.split()).lower()
        return normalized_str == normalized_str[::-1]

 input_string = input("Enter a string: ")
# Check and print if it's a palindrome
if is_palindrome(input_string):
   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():
    print("Enter the lengths of the two sides of a right-angled triangle:")
  side1 = float(input("Length of side 1 (or hypotenuse): "))
  side2 = float(input("Length of side 2 (or the other side): "))

  choice = input("Is side1 the hypotenuse? (yes/no): ").strip().lower()

  if choice == 'yes':
     if side1 <= side2:
        print("The hypotenuse must be the longest side.")
        return
        other_side = math.sqrt(side1**2 - side2**2)
    print(f"The length of the other side is: {other_side:.2f}")
  else:
     hypotenuse = math.sqrt(side1**2 + side2**2)
     print(f"The length of the hypotenuse is: {hypotenuse:.2f}")

if __name__ == "__main__":
  calculate_third_side()
```

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

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

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

        for char, count in frequency.items():
    print(f"'{char}': {count}")
```