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## Assignment Name - Python Worksheet

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

1) which of the following operation is used to calculate remainder in a division?

⇒ (C) %

2) In python 2/3 is equal to ?

⇒ (A) 0.666

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

⇒ (C) 24

4) In python, 6&2 will have give which of the following als output?

⇒ (D) 0

5) In python, 6/2 will have give which of the following als output?

⇒ (D) 6

6) what does the fin finally keyword denote in python ?

⇒ (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?

⇒ (D) None of the above

8) which of the following is a common use case of yield keyword in python?

⇒ (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?

⇒ (C) abc2

10) which of the following are the key words in python?

⇒ (A) yield

Q.11 to Q.15 are programming questions  
Answer them in jupyter notebook.

11) write a python program to find the factorial of a number.

→ Certainly! Here's simple python program to find the factorial of a num

Python code

```
def factorial(n):
    if n == 0 or n == 1:
        return 1
    else:
        return n * factorial(n-1)
# Example: Find factorial of 5
number = 5
result = factorial(number)
print(f"The factorial of {number} is : {result}")
```

This program defines a recursive function 'factorial' to calculate the factorial of a given number. The example then demonstrates finding the factorial of 5.

12) write a Python program to find whether a number is prime or composite.

⇒ Certainly! Here's a Python program to determine whether a given number is prime or composite:

```
Python code
def is_prime(number):
    if number < 1:
        return False
    elif number == 2:
        return True
    elif number % 2 == 0:
        return False
    else:
        # check for factors up to the square root
        # of the number
        for i in range(3, int(number**0.5) + 1, 2):
            if number % i == 0:
                return False
    return True

# Example: check if 7 is prime
num_to_check = 7
if is_prime(num_to_check):
    print("The number {} is a prime number.".format(num_to_check))
else:
    print("The number {} is a composite number.".format(num_to_check))
```

(3) Write a Python program to check whether a given string is palindrome or not.

⇒ python ~~array~~ ~~and~~ ~~function~~ ~~copy code~~

```
def isPalindrome(s):
    # Convert the string to lowercase and remove spaces
    s = s.lower().replace(" ", "")

    # Check if the reversed string is equal to the original string
    return s[::-1] == s

# Examples
input_string = "A man a plan a canal Panama"
if isPalindrome(input_string):
    print(f'{input_string} is a palindrome')
else:
    print(f'{input_string} is not a palindrome')
```

This program defines a function 'isPalindrome' that checks whether a given string is a palindrome or not. The example then checks if the string "A man a plan a canal Panama" is a palindrome. Note that this implementation considers the string in a case-insensitive manner and ignores spaces.

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

Python

# copy code

`import math`

`def calculate_third_side(side1, side2):`

`# calculate the length of the third side`

`using the pythagorean theorem`

`third_side = math.sqrt(side1**2 + side2**2)`

`return third_side`

`# Example: calculate the third side of a`

`right-angled triangle with sides 3 and 4`

`side1 (=3) with -> input?`

`side2 = 4`

`third_side = calculate_third_side(side1 -> input? with -> input? and taking side2)`

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

`{third_side}")`

This program defines a function

`calculate_third_side` that takes the lengths of the two sides and uses the Pythagorean theorem to calculate the length of the third side. The example then calculates the third side for a right-angled triangle with sides 3 and 4.

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

~~python~~

copy code

```
def character_frequency(input_string):
    # Initialize an empty dictionary to store character frequencies
```

```
Frequency_dict = {}
    # Count the frequency of each character in the string
```

```
for char in input_string:
```

```
    if char in Frequency_dict:
        Frequency_dict[char] += 1
```

```
    else:
```

```
        Frequency_dict[char] = 1
```

```
    # Print the character frequencies for char, frequency in Frequency_dict:
```

```
print("The character '{char}' appears {frequency} times.")
```

```
# Example: calculate character frequencies in the string "Hello world"
```

```
input_string = "Hello world"
```

```
character_frequency(input_string)
```

This program defines a function `character_frequency` that takes a string and prints the frequency of each character in that string. The example then demonstrates calculating the character frequency for the string "Hello world."