ASSIGNMENT NO. 1

SUBJECT: COMPUTER SCIENCE CLASS-XII APRIL-MAY '2026

Ch 1: Review of python basics

Q1. What are tokens in Python? How many types of tokens are allowed in Python? Exemplify your answer.

Q2. What are operators? What is their function? Give examples of some unary and binary operators.

Q3. What is the difference between implicit type conversion and explicit type conversion?

Q4. Rewrite the below code in python after removing all syntax error(s). Underline each correction done in the code.

```
30 = To
for K in range(0,To)
IF k%4 == 0:
print(K * 4)
Else:
print(K+3).
```

Q5. Predict the output of the following code fragments:

```
x = 10
y = 0
while x > y:
print (x, y)
x = x - 1
y = y + 1
```

Q6. Predict the output of the following code fragments:

```
for z in range(-500, 500, 100):
    print (z)
```

Q7. Predict the output of the following code fragments:

```
x ='apple, pear, peach, grapefruit'
y = x.split(', ')
for z in y:
    if z < 'm':
        print(str.lower(z))
    else:
        print(str.upper(z))
```

Q8. Write a program that reads an integer N from the keyboard computes and displays the sum of the numbers from N to (2 * N) if N is non negative. If N is a negative number, then it's the sum of the numbers from (2 * N) to N. The starting and ending points are included in the sum.

Q9. What is the difference between a list and a tuple ?

Q10. Write code to do the following :

a. Define a variable named states that is an empty list.
b. Add 'Delhi' to the list.
c. Now add 'Punjab' to the end of the list.
d. Define a variable states2 that is initialized with 'Rajasthan', 'Gujarat', and 'Kerala'.
e. Add 'Odisha' to the beginning of the list states2.
f. Add 'Tripura' so that it is the third state in the list states2.
g. Add 'Haryana' to the list states2 so that it appears before 'Gujarat'. Do this as if you DO NOT KNOW where 'Gujarat' is in the list. Hint. See what states2.index("Rajasthan") does. What can you conclude about what listname.index(item) does ?
h. Remove the 5th state from the list states2 and print that state's name.

Q11. What is the difference between (30) and (30,) ?

Q12. What will be the output produced by following code fragments ?

```
x = "hello" + \
"to Python" + \
"world"
for char in x :
        y = char
        print(y, ':', end=" ")
```

Q13. Predict the output of the following code snippet ?

```
Numbers = [9, 18, 27, 36]
for Num in Numbers :
        for N in range(1, Num % 8) :
                print(N, "#", end=" ")
        print( )
```

Q14. Write a python program that creates a tuple storing first 9 terms of Fibonacci series.

Q 15. Write a program to create a dictionary with names as keys and marks as values. Display the name of the student scoring highest marks.

Ch 2 : Functions

1. What is the difference between a built-in function and a user-defined function? Give examples.
2. Define a function. Why are functions useful in programming?
3. Differentiate between **local** and **global** variables with an example.
4. What will be the output of the following code?

```
def test(a=5, b=10):
print(a, b)
test()
test(3)
test(7, 8)
```

5. Write a function in Python that takes a string as an argument and returns the number of vowels in it.

6. Write a Python program with a function that accepts a number and returns `True` if it is prime, else `False`.
7. Define the terms:
   (i) Function definition
   (ii) Function call
   (iii) Function return value
8. Write a Python function that takes two numbers and returns their highest common factor (HCF).
9. What is the difference between **positional arguments** and **keyword arguments** in Python functions? Illustrate with examples.
10. Write a function that accepts a number and prints its multiplication table.
11. Write a program using a user-defined function to calculate the factorial of a number using recursion.
12. Write a function that takes a list of numbers and returns the maximum and minimum numbers from the list.
13. Explain the scope of a variable in a function with an example.
14. Write a function that counts and returns the number of uppercase and lowercase letters in a string.
15. Write a Python program using functions to accept marks in five subjects and return the percentage and grade of a student based on the following criteria:

Grade A: >= 90%
Grade B: >= 75% and < 90%
Grade C: >= 60% and < 75%
Grade D: < 60%

Ch 3 : Data File Handling

1. Write a function CountVowels() that reads a text file STORY.TXT and counts the number of vowels present in the file.
2. Write a function CountWord() to count and display the number of words starting with a vowel in a text file DATA.TXT.
3. Write a function DisplayLines() that reads a text file PARA.TXT and displays only those lines which start with the word **"The"**.
4. Write a function ReplaceWord() that replaces all occurrences of the word **"India"** with **"Bharat"** in a text file COUNTRY.TXT.
5. Write a function RemoveLines() that removes all lines containing the word **"a"** (case insensitive) from a file NOTES.TXT.
6. Write a function CountUpperLower() that reads a file DETAILS.TXT and counts the number of uppercase and lowercase letters present in the file.
7. Write a program to copy all lines from SOURCE.TXT to TARGET.TXT except those lines which start with a vowel.
8. Write a function CountPython() to count how many times the word **"Python"** appears in a text file TECH.TXT.
9. Write a function LongestLine() that reads a file ARTICLE.TXT and displays the longest line present in the file.
10. A file STUDENT.TXT contains student names and marks in the following format:
Riya,85
Aman,92
Neha,78

Write a program to read the file and display the name of the student scoring the highest marks