Python Program Practical Report File – Term 1

All S6 Computer Science students are required to submit ONE typed/printed
Practical Report File covering Class XI Term 1 Python Programming curriculum.
The Practical Report File must include the followings:

- Cover Page indicating the name of the Student, School, Class, Section and Roll Number
- Index Page with Page Numbers against each program
- Source Code of each Python Program with the followings:
  [**Minimum 50 No**. of Class XI – Term 1 Programs]
  - ✓ Problem/Program Number along with Date as single line comment
  - ✓ Problem Definitions as multiple line comment at the top of program
  - ✓ Name of the Student, Class, Section as single line comment
  - ✓ Appropriate naming of the identifiers
  - ✓ Proper Indentation of the source codes
  - ✓ Sufficient comments for internal documentations including logical explanation of main steps
  - ✓ Sample Output of each of the Python program

TASK 01: WAPP to display Hello World! on the screen.

TASK 02: WAPP to demonstrate concatenation and repetition of strings.

TASK 03: WAPP to demonstrate floor division and modulus operators.

TASK 04: WAPP to read the age of a person and check whether the person can vote or not.

TASK 05: WAPP to calculate area of different geometrical figures based on User's Menu.

TASK 06: WAPP to solve a quadratic equation and also display the nature of roots.

TASK 07: WAPP to read a year and check whether the year is a Leap year or not.

TASK 08: WAPP to read 3 sides (or angles) of a triangle and display the Nature of triangle.

TASK 09: WAPP to demonstrate all methods applicable on strings.

TASK 10: WAPP to demonstrate all methods available in math module.

TASK 11: WAPP to demonstrate all methods available in random module.

TASK 12: WAPP to input annual income of a person and calculate the payable income tax based on the table given below:

New Income Tax Slabs & Rates : FY 2020-21 (AY 2021-22)	
Income Slabs	**Income Tax Rates**
Upto Rs. 2,50,000	Nil
Rs. 2,50,001 to Rs. 5,00,000	5%
Rs. 5,00,001 to Rs. 7,50,000	10%
Rs. 7,50,001 to Rs. 10,00,000	15%
Rs. 10,00,001 to Rs. 12,50,000	20%
Rs 12,50,001 to Rs 15,00,000	25%
Above Rs. 15,00,000	30%

Domestic Electricity LT Tariff Slabs and Rates for all states in India in 2019			
STATES	**UNITS**		**Rate Per Unit**
	From	**To**	
Delhi (As per tariff order dated 28th March 2018)	0	200	3
	201	400	4.5
	401	800	6.5
	801	1200	7
	1201	above	7.75

TASK 13: WAPP to input eclectic consumption (present reading – previous reading) of a house and calculate total electric bill based on the above table.

Note: Bill upto 200 units is ZERO.

TASK 14: WAPP to input two natural numbers and display all the EVEN numbers between those.

TASK 15: WAPP to input a natural number and display the MULTIPLICATION TABLE of that number.

TASK 16: WAPP to input a natural number N and display first N FIBONACCI numbers.

TASK 17: WAPP to input a natural number and display all the FACTORS of that number.

TASK 18: WAPP to input a natural number and display the SUM OF all its proper FACTORS.

TASK 19: WAPP to input a natural number and check whether the number is a PERFECT or not.

TASK 20: WAPP to input two natural numbers and check whether those numbers are AMICABLE or not.

TASK 21: WAPP to input a natural number and check whether the number is a PRIME or not.

TASK 22: WAPP to input a natural number N and display the first N PRIME numbers.

TASK 23: WAPP to input a number N and display all PRIME numbers less than equals to N.

TASK 24: WAPP to input a natural number N and display the sum of all PRIME numbers less than equals to that number N.

TASK 25: WAPP to input two natural numbers and calculate and display their HCF/GCD

TASK 26: WAPP to input two natural numbers and check whether they are CO-PRIME or not.

TASK 27: WAPP to input two natural numbers and calculate and display their LCM

TASK 28: WAPP to input a natural number and display the SUM OF all its DIGITS.

TASK 29: WAPP to input a natural number and check whether the number is a ARMSTRONG number or not.

TASK 30: WAPP to input a natural numbers and display the same but after REVERSING its digits.

TASK 31: WAPP to input a natural numbers and check whether the number is PALINDROMIC or not.

TASK 32: WAPP to input an amount of money and display MINIMUM CURRENCY NOTES (out of 2000/500/200/100/50/20/10/5/2/1) required to have that money.

TASK 33: WAPP to input 3 numbers and display those in ASCENDING/DESCENDING order.

TASK 34: WAPP to input a natural number N and calculate & display the FACTORIAL of N.

Write Python programs to input a floating number x and a natural number n and calculate and display the sum of the following series:

TASK 35: $1 \pm x + x^2 \pm x^3 + \ldots\ldots\ldots\ldots \pm x^n$

TASK 36: $1 + \frac{x}{1!} + \frac{x^2}{2!} + \frac{x^3}{3!} + \cdots + x^n$ [e^x : exponential series]

TASK 37-A / 37-B: $1 \pm \frac{x^2}{2!} + \frac{x^4}{4!} \pm \frac{x^6}{6!} + \cdots \pm \frac{x^{2n}}{(2n)!}$ [cos(x) : cosine series]

TASK 38-A / 38-B: $x \pm \frac{x^3}{3!} + \frac{x^5}{5!} \pm \frac{x^7}{7!} + \cdots \pm \frac{x^{2n+1}}{(2n+1)!}$ [sin(x) : sin series]

Write Python programs to input a natural number N (if N=4) and display the following PATTERNS:

TASK 39-A:

```
*
* *
* * *
* * * *
```

TASK 39-B:

```
1
1 2
1 2 3
1 2 3 4
```

TA K 40-A:

```
   *
  * * *
 * * * * *
* * * * * * *
```

TASK 40-B:

```
    1
  1 2 1
1 2 3 2 1
1 2 3 4 3 2 1
```

TASK 41: WAPP to illustrate the difference between append() vs insert() methods and pop() vs remove() methods when applied on a Python LIST

TASK 42: WAPP to process menu based following operations on a Python LIST having numbers.

[Create / Append / Display / Search / Modify / Delete]

TASK 43: WAPP to read a LIST of numbers and illustrate a methods available in Statistics module.

TASK 44: WAPP to process STACK (LIFO) operations on a Python LIST of numbers.

TASK 45: WAPP to read a LIST of numbers and create 2 separate LISTs EVEN and ODD.

TASK 46: WAPP to read a string and display the following pattern if the string is 'INDIA'.

TASK 46-A:

```
I
I N
I N D
I N D I
I N D I A
```

TASK 46-B:

```
        I
      I N
    I N D
  I N D I
I N D I A
```

TASK 47: WAPP to read a name and display the. Initial as M.K.G,

TASK 48: WAPP to read a name and display the. Initial as M.K.Gandhi

TASK 49: WAPP to read a string and check whether the string is a PALINDROME or not.

TASK 50: WAPP to read a sentence and display he same by reversing characters of all words without changing the sequence of the words.

TASK 51: WAPP to read a sentence and check whether that sentence contains a word entered by the user..

TASK 52: WAPP to read a Python List having 10 Country names and display only those which are 6 or more characters long.

TASK 53: WAPP to read a List having 10 names and display only those which begin with vowels.

TASK 54: WAPP to read a List having 10 names and display only those which ends with consonants.

TASK 55: WAPP to process QUEUE (FIFO) operations on a Python LIST of names

Special Python Program (at least ONE):

TASK 56: Number Guessing Games [Dice]

TASK 57: Number Guessing Games [Bigger/Smaller]

TASK 58: Cross N Knot

TASK 59: Stone / Paper / Sizer

TASK 60: Quiz [Nested LIST]

Must be submitted on Half Yearly Practical Examination Day