**LAB EXTERNAL**

1. Demonstrate the installation of Python for windows
2. Demonstrate the importing of numpy, pandas and matplotlib and mention briefly about their purpose.
3. Write a python program for printing values using format() method, % operator and format specifier.
4. Write a python program illustrating all bitwise operators.
5. Write a python program to perform swapping of given two numbers:
   1. Using a temporary variable b) Without using temporary variable
6. Write a python program evaluating the following expressions:
   1. r // a + b \* c – d / e b) r //( (a+b) \* ((c- d) / e))
7. Write a python program to print factors of a given number.
8. Write a python program to check whether the given number is Armstrong or not.
9. Write a python program to print numbers that are divisible by a given number up to given range using unconditional statements.
10. Write a python program to create a list and print all elements of the list:
    1. Without using list method b) Using list method
11. Write a python program demonstrating the following operations on tuple:
    1. Create a tuple and copy the contents of the list.
    2. Delete elements from the tuple after displaying the contents.
12. Write a python program demonstrating the following operations on dictionary:
    1. Create a dictionary and display the contents.
    2. Create a dictionary having multiple values for the same key.
    3. Concatenate two lists and convert into a dictionary
13. Write a python program demonstrating command line arguments.
14. Write a python program implementing the following operations on arrays using array module:
    1. Print the first n elements b) Print the elements with given stride value

c) Print the elements in reverse order. d) Copy the contents into another array.

1. Write a python program implementing the following operations on arrays using numpy module:
   1. Create a 2x3 array and add elements b) Convert the dimensions of the array into 3x2.

c) Convert the dimensions of the array into 1x6. d) Copy the contents into another array.

1. Write a python program to print factorial of a given number using functions:
   1. Without using recursion b) Using recursion
2. Write a python program to display Fibonacci series up to given range using functions:
   1. Without using recursion b) Using recursion
3. Write a python program illustrating:
   1. handling multiple exceptions at a time b) handling multiple exceptions one after another

c) Handling unknown exception d) Demonstrate finally and else block.

1. Write a python program to create a new file and add the given text into the file.
2. Write a python program to add the contents into an existing file and display the contents of a file from the specified position.