Ramaiah Institute of Technology
(Autonomous Institute, Affiliated to VTU)

Data Visualization using Python Lab

Academic year 2025 - 2026

Lab Practice Test - I

Section 1: Multiple Choice Questions (MCQs)

1. What will be the output of the following code?

```
x = [1, 2, 3]
y = x
y.append(4)
print(x)
```

a) [1, 2, 3]
b) [1, 2, 3, 4]
c) [1, 2, 3] and [1, 2, 3, 4]
d) Error

2. What is the correct way to open a file in Python for reading?

a) `open('file.txt', 'r')`
b) `open('file.txt', 'w')`
c) `open('file.txt', 'rb')`
d) `open('file.txt', 'wb')`

3. What will `type(5/2)` return in Python 3?
a) `int`
b) `float`
c) `double`
d) `complex`

4. What is the output of the following code?

```
print(bool([]), bool(''), bool(0), bool(None))
```

a) `False False False False`
b) `True True True True`
c) `False False False True`
d) `True True False False`

5. What does `list(range(3, 10, 2))` return?
a) `[3, 5, 7, 9]`
b) `[3, 5, 7]`
c) `[3, 4, 5, 6, 7, 8, 9]`
d) `[3, 6, 9]`

Section 2: Fill in the Blanks

- In Python, a variable inside a function is _____ unless specified otherwise using the `global` keyword.
- `_________` is used to iterate over sequences such as lists, tuples, and strings.
- The `_________` function is used to get the length of a list or string.
- `_________` keyword is used to define an anonymous function in Python.
- To remove an element from a list by value, we use `_________`, whereas to remove an element by index, we use `_________`.

Section 3: Coding Questions

- Write a Python function to check if a number is **even or odd**.
- Write a Python program to **find the sum of all elements** in a list.
- Write a Python function that **returns the factorial** of a given number.
- Write a Python program to **find the largest number in a list**.
- Write a Python program to **reverse a string without using the built-in reverse function**.

Section 4: Debugging

a. Find the error in the following code and fix it:

```
def sum_numbers(a, b)
    return a + b
print(sum_numbers(3, 5))
```

b. What will be the output of the following code, and how can it be corrected?

```
list1 = [1, 2, 3]
print(list1[3])
```

c. Identify and fix the issue in this loop:

```
for i in range(5, 1):
    print(i)
```

Section 5: Logical Thinking

a. Write a Python program to print **Fibonacci series** up to n terms.
b. Write a Python program to **check if a given string is a palindrome**.

Solutions for Python Basics Test

Section 1: Multiple Choice Questions (MCQs)

1. **b) [1, 2, 3, 4]**
2. **a) `open('file.txt', 'r')`**
3. **b) `float`**
4. **a) `False False False False`**
5. **a) `[3, 5, 7, 9]`**

Section 2: Fill in the Blanks

1. **local**
2. **for loop**
3. **len()**
4. **lambda**
5. **remove()**, **pop()**

Section 3: Short Coding Questions

1. **Even or Odd Check**

```
def check_even_odd(n):
    return "Even" if n % 2 == 0 else "Odd"

print(check_even_odd(4))  # Output: Even
```

2. **Sum of List Elements**

```
def sum_list(lst):
    return sum(lst)

print(sum_list([1, 2, 3, 4, 5]))  # Output: 15
```

3. **Factorial Calculation**

```
def factorial(n):
    if n == 0 or n == 1:
        return 1
    return n * factorial(n - 1)

print(factorial(5))  # Output: 120
```

4. **Find Largest Number in List**

```
def find_max(lst):
    return max(lst)

print(find_max([1, 2, 3, 4, 5]))  # Output: 5
```

5. **Reverse a String**

```
def reverse_string(s):
    return s[::-1]

print(reverse_string("hello"))  # Output: olleh
```

Section 4: Debugging

1. **Fixing Syntax Error**

```
def sum_numbers(a, b):  # Missing colon fixed
    return a + b

print(sum_numbers(3, 5))  # Output: 8
```

2. **Fixing Index Error**

```
list1 = [1, 2, 3]
print(list1[2])  # Fix: Change list1[3] to list1[2] (Index starts at
0)
```

3. **Fixing Incorrect Range**

```
for i in range(5, 1, -1):  # Fix: Add a step of -1
    print(i)  # Output: 5, 4, 3, 2
```

Section 5: Logical Thinking

1. **Fibonacci Series**

```
def fibonacci(n):
    a, b = 0, 1
    for _ in range(n):
        print(a, end=" ")
        a, b = b, a + b

fibonacci(6)  # Output: 0 1 1 2 3 5
```

2. **Palindrome Check**

```
def is_palindrome(s):
    return s == s[::-1]

print(is_palindrome("madam"))  # Output: True
print(is_palindrome("hello"))  # Output: False
```