# ASSIGNMENT – 1

Python for Data Science
SRN: PES2UG22EC056

Name: Gopika N
Date: 31/8/25

**MCQ'S**

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

x = 5

y = 2
print(x // y)

a) 2.5
b) 2
c) 3
d) 5
Answer: (b) 2 (Floor division operator // returns integer quotient).

2) Which of the following is a mutable data type in Python?

a) Tuple
b) String
c) List
d) Integer
Answer: (c) List

**Descriptive questions**

1)Differentiate between Python lists, tuples, and dictionaries in terms of mutability, ordering, and typical use cases.

Answer:
Lists
- Ordered, mutable (can be modified after creation).
- Elements can be added, removed, or updated.
- Suitable for storing datasets that may change.
Tuples
- Ordered, immutable (cannot be changed after creation).
- More memory efficient than lists.
- Used when data must remain constant.
Dictionaries
- Unordered, mutable.

- Stores data as key-value pairs.
- Ideal for labeled datasets or quick lookups.

2) Explain Python's control flow statements (if-else, loops) with an example of checking whether a number is even or odd, and printing all even numbers up to that number.
Answer:

Control Flow in Python
- if-else: Executes code blocks conditionally.
- for loop: Iterates over a sequence (list, string, range).
- while loop: Repeats a block until a condition is false.

code:
```
n = 10

if n % 2 == 0:
    print(f"{n} is Even")
else:
    print(f"{n} is Odd")

print("Even numbers up to", n, ":")
for i in range(2, n+1, 2):
    print(i, end=" ")
```

Output:
10 is Even
Even numbers up to 10 :
2 4 6 8 10