**Practical No.04**

* **Hypothesis Testing**

**Code:**

import numpy as np

from scipy import stats

# Generate two sets of sample data (exam scores)

np.random.seed(42) # For reproducibility

# Sample data for traditional teaching method

traditional\_scores = np.random.normal(loc=70, scale=15, size=100)

# Sample data for experimental teaching method

experimental\_scores = np.random.normal(loc=72, scale=15, size=100)

# Perform t-test

t\_statistic, p\_value = stats.ttest\_ind(traditional\_scores, experimental\_scores)

# Define significance level

alpha = 0.05

# Interpret the results

print("T-statistic:", t\_statistic)

print("P-value:", p\_value)

if p\_value < alpha:

print("Reject the null hypothesis. There is a significant difference between the means.")

else:

print("Fail to reject the null hypothesis. There is no significant difference between the means.")

**Output:**

