**FACULTY OF ENGINEERING, SCIENCES AND TECHNOLOGY**

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| **Course:** | Introduction to Python | **Instructor:** | Umat Ul Shaiya |
| **Marks Allocated:** | 5 Marks | **Time Allocated:** | 01 hour |
| **CLO Allocated:** | CLO – 1 (BT Level) | **PLO Allocated:** | PLO – 1 (Engineering Knowledge) |

# ASSIGNMENT # 01

## Question # 01

You are developing a program to manage products in an online marketplace. The system needs to handle different types of products such as electronics, clothing, and groceries. Each product shares common attributes like name, price, and manufacturer, but also has specific attributes unique to its type.

### Requirements:

1. **Base Class**: Create a base class `Product` with attributes `name`, `price`, and `manufacturer`, and a method to display the details of the product.
2. **Derived Classes**: Create derived classes `ElectronicProduct`, `ClothingProduct`, and `GroceryProduct`:
    - `ElectronicProduct` should inherit from `Product` and have additional attributes like `brand` and `model`.
    - `ClothingProduct` should inherit from `Product` and have additional attributes like `size` and `material`.
    - `GroceryProduct` should inherit from `Product` and have additional attributes like `expiry_date` and `quantity`.
3. **Display Output**: Display the details of an electronic product, a clothing product, and a grocery product, demonstrating how inheritance and class-specific attributes and methods work in Python.

## Question # 02

You are a teacher who has a list of student grades for a recent exam. The grades are stored in a NumPy array. You need to sort these grades in ascending and descending order for analysis and **Show** the:

A. Sort the array of grades in ascending order.
B. Sort the array of grades in descending order.

Sort the grades while maintaining the correspondence with student names.