THEORY QUESTIONS

**1. Difference Between Variables and Constants**

* **Variables**:
  + A variable is a storage location that holds data, and its value can be changed during the execution of a script.
  + Variables in PHP start with a dollar sign ($), e.g., $variableName.
  + Example:
* **Constants**:
  + A constant holds a value that cannot be changed once it's defined.
  + Constants are defined using the define() function or the const keyword in PHP.
  + Unlike variables, constants do not use a dollar sign and are usually written in uppercase.
  + Example:

**2. Name and Describe the Four Data Types in PHP**

PHP supports many data types, but the four primary scalar types are:

1. **Integer**:
   * Represents whole numbers (positive, negative, or zero) without decimals.
   * Example: 1, -5, 100
2. **Float (Double)**:
   * Represents numbers with decimal points or in exponential form.
   * Example: 3.14, 10.5, 2e10
3. **String**:
   * Represents sequences of characters, text, or a series of characters enclosed in quotes (either single or double).
   * Example: "Hello World", 'PHP is great'
4. **Boolean**:
   * Represents a true or false value.
   * Example: true, false

**3. Purpose of the NULL Data Type**

* The **NULL** data type represents a variable with no value or a variable that has been explicitly set to "no value."
* In PHP, a variable is considered to be NULL if:
  + It has been assigned the constant NULL.
  + It has not been assigned any value yet.
  + It has been unset using unset().

Purpose:

* It is used to signify that a variable has no value or has been deliberately cleared.

**4. Strongly vs Loosely Typed Programming**

* **Strongly Typed Programming**:
  + In strongly typed languages, variables are bound to a specific data type, and explicit conversions between types are required.
  + If you try to use a variable in a way inconsistent with its type, the program will result in an error.
  + Example: In Java or C++, an integer cannot automatically be treated as a string or float.
* **Loosely Typed Programming**:
  + In loosely typed languages, variables are not bound to a specific data type, and the language automatically handles type conversions.
  + PHP is loosely typed, meaning you can assign a value of one type to a variable and later assign a value of a different type.
  + Example: In PHP, you can change a variable from a string to an integer without issues.

**5. What is Concatenation?**

**Concatenation** refers to combining two or more strings together to form a single string.

* In PHP, concatenation is done using the . (dot) operator.

OBJECTIVE AND MCQ’S

1. **Positive and negative numbers and 0 with no decimal places belong to which data type?**
   * **d) Integer**
2. **Which of the following is a valid variable name?**
   * **c) $TotalSalary;**
3. **Which is the correct syntax for declaring a variable and assigning it a string?**
   * **a) $Name = "Muhammad”;**
4. **How many decimal places does an integer store?**
   * **d) Integer does not store decimal places**
5. **Variable name must be starting with which symbol?**
   * **c) $**
6. **Combine two or more strings or other values by using the concatenation symbol:**
   * **d) . (dot)**
7. **String constant value:**
   * **a) Must be enclosed in double quote**
8. **A constant is case-sensitive by default. By convention, constant identifiers are always:**
   * **c) Upper case**
9. **We use the \_\_\_\_\_\_\_\_ function to create a constant.**
   * **a) define**
10. **A loosely typed programming language \_\_\_\_\_\_\_.**

* **a) Does not require data types of variables to be declared**

**PRACTICAL QNS NO 3 AND 4**

**3. How Do You Make a Constant Name Case Insensitive?**

**In PHP, you can make a constant name case-insensitive by passing a third parameter (true) to the define() function when declaring the constant.**

**4. How Do You Declare a Constant in PHP? (With Example)**

**You declare a constant in PHP using the define() function or the const keyword.**

**Using define() Function:**

**The define() function is used to declare constants at runtime. It takes two arguments: the name of the constant and its value.**

**Syntax:**

**define("CONSTANT\_NAME", value);**

**Example:**

**php**

**Copy code**

**<?php**

**define("COMPANY\_NAME", "Tech Solutions");**

**echo "The company name is " . COMPANY\_NAME;**

**?>**

**Using const Keyword:**

**The const keyword is another way to declare constants but is limited to declaring them within classes or at the top level of the script. It cannot be used within loops, conditionals, or functions.**

**Syntax:**

**const CONSTANT\_NAME = value;**

**Example:**

**<?php**

**const COMPANY\_NAME = "Tech Solutions";**

**echo "The company name is " . COMPANY\_NAME;**

**?>**