JavaScript Test 1 (2 Hours)

Year 1 Semester 2 BSIT and BSDS Class
Exam Duration: 2 hours
Total Ovaral Score: 75 marks

Instructions:

- Each section of the test should be organized in its own folder.
- Inside each section folder, ensure that each question number corresponds to its own separate JavaScript file (e.g., Question 1 from Section A should be in `A1.js`, Question 2 in `A2.js`, etc.).
- All section folders (Section A, Section B, etc.) should be placed in a parent folder named with **your access number** (e.g., if your access number is B10000, the folder should be named B10000).
- Zip the folder and upload it in moodle.

Section A: Variables and Constants

(Total: 15 marks)

1. Define and differentiate between variables and constants in JavaScript. **(5 marks)**
2. Write a JavaScript program that stores the name of a country in Africa and its population using variables, and the current year as a constant. **(5 marks)**
3. Explain the difference between `var`, `let`, and `const` in JavaScript.What happens if you try to reassign values to variables declared with `let` or `const`? **(5 marks)**

Section B: IDEs for JavaScript Programming

(Total: 10 marks)

1. Explain the role of an Integrated Development Environment (IDE) in JavaScript programming. Give two examples of popular IDEs used in for coding in JavaScript. **(5 marks)**
2. Outline steps to install JavaScript in any of the following IDEs: Visual Studio Code. **(5 marks)**

Section C: If Statements

(Total: 15 marks)

1. In a market, a vendor in Kampala gives a discount if the total price of products exceeds 100,000 UGX. Write a JavaScript program that stores the prices of three products and calculates their total. Use an if statement to determine if the discount is applicable. **(7 marks)**
2. A student needs to choose an elective course based on their UACE results. Write a JavaScript program that stores the students UACE points and prints "Eligible for BSIT and Data Science" if the points are greater than or equal to 7, otherwise prints "Choose Social Science." **(8 marks)**

Section D: Switch Statements

(Total: 5 marks)

1. In African countries, mobile network providers offer different call rates. Write a JavaScript program using a switch statement to print out the call rate based on the user's input for a network code (e.g., MTN: 1, Airtel: 2, Africell: 3). **(5 marks)**

Section E: Loops (For and While)

(Total: 15 marks)

1. Using a `for or while` loop, write a program that prints the rainfall recorded in millimeters for each of the last 10 days in a rural region in Ghana. Assume the rainfall data is stored in a list.**(15 marks)**

Section G: Basic Functions

(Total: 15 marks)

1. Write a function in JavaScript called `calculateTax` that accepts the income of a person in Nigeria and returns the tax payable (assume a tax rate of 15%). **(8 marks)**
2. Create a simple function `greetUser` that accepts a user's name and prints "Welcome to Africa, [name]!" Test the function with three different names. **(7 marks)**