Programme	**Diploma in Information Technology (PT)**
Module	**Web Development 2B**
Module Code	**WPD 220**
NQF Level	**6**
Credits	**10**
Assessment Type	**Deferred Test Memo**
Semester	**2nd**
Date	**23 September 2021**

Duration	**2 hours**
Total marks	**100**
Pass mark	**50%**
Weighting	**20%**
Examiner	**Ms. Jacqueline Mtomba**
Moderator	

This question paper consists of 7 pages including the cover page.

REQUIREMENTS:

Learner Requirements: Stationery and Examination Answer booklet
Equipment Requirements: Notepad++ on computer

This paper consists of:

1.	Section A:	**20 marks**
2.	Section B:	**20 marks**
3.	Section C:	**60 Marks**

ALL sections are **COMPULSORY**. It is in your own interest to write legibly and to present your work neatly.

PLEASE READ THE ASSESSMENT RULES AND REGULATIONS THAT FOLLOW

Learners are warned that contravening any of the examination rules or disobeying the instructions of an invigilator could result in the examination being declared invalid. Disciplinary measures will be taken which may result in the students' expulsion from Damelin.

ASSESSMENT RULES AND REGULATIONS

Please ensure that you have read and fully understand the following assessment rules and regulations prior to commencing with your assessment:

1. To be permitted access to the examination, a learner must arrive with:
   - an Identity Document or other official proof of identity (for example, a student card, passport or driver's licence card with photo); and
   - the required exam stationery.
2. No learner may enter the examination room more than 30 minutes after the examination sitting has commenced and no candidate may leave the room less than one hour after the examination sitting has commenced.
3. No extra time will be allowed should a student arrive late.
4. All learners must sign the *Attendance Register* for the examination on arrival.
5. It is the responsibility of learners to familiarise themselves with the examination rules prior to sitting for the examination.
6. All examinations are to be written on the date and time officially stipulated by the College.
7. It is the responsibility of learners to ensure that they are writing the correct paper and that the question paper is complete
8. Cell phones must be switched *off* prior to entering the exam venue. Cell phones and wallets may be placed under candidates' chairs rather than at the front of the room.
9. Learners may not handle cell phones or wallets during the exam.
10. No weapon of any description may be taken into the assessment room.
11. All personal belongings are to be placed at the front of the examination room. Personal belongings brought to the examination are at the owner's risk.
12. Smoking is not permitted, and learners will not be allowed to leave the examination room in order to smoke
13. Once the examination has commenced, all conversation of any form between candidates must cease until after candidates have left the room, after the examination.
14. *Only* the official College examination book, as supplied by the College, may be used.
15. Learners must ensure that their student number is written on the answer book.
16. Learners are responsible for ensuring that they follow the instructions in the examination for submitting their answers.
17. Please read the instruction appearing on the examination paper carefully
18. The number of every question must be clearly indicated at the top of every answer.
19. No pages may be torn out of the answer book. All question papers and scrap paper must be handed to the invigilator after the examination.
20. Learners finishing earlier are to leave the examination room as quietly as possible on the instruction of the invigilator and may not talk until outside the building where the examination is being written.
21. Only under exceptional circumstances will a learner be permitted to leave the examination room during the examination, and if the invigilator gives permission. An invigilator must accompany the learner. Only one learner at a time may be absent from the examination room.
22. Candidates may not act dishonestly in any respect.

SECTION A

QUESTION 1: MULTIPLE CHOICE QUESTIONS **(10)**

Select the correct answer from the options available.

In the provided answer book, write down the question number and the letter of the correct answer next to it

1.1 How can a client-side language help when using forms on a Web page?

A. It can save the information on the server.

B. It can validate the information before it is sent to the server.

C. It can update a file and save the file with the new information.

D. It can't help at all.

1.2 Which of the following correctly points to an external JavaScript file named yourfile.js?

A. <extscript type="text/javascript" src="yourfile.js"></extscript>

B. <script type= "text/javascript" src="yourfile.js"></script>

C. <script language="yourfile.js"></script>

D. <script type="text/javascript" link="yourfile.js"></script>

1.3 Which of the following variable declarations uses a variable with a valid variable name in JavaScript?

A. var return;

B. var my_house;

C. var my dog;

D. var 2cats;

1.4 Multiple arguments in a function are separated by what symbol?

A. Period

B. Colon

C. Semicolon

D. Comma

1.5 What does a comparison operator do?

A. Performs a mathematical calculation

B. Deals with bits and is not important right now

C. Compares two values or statements, and returns a value of true or false

D. Compares only numbers, not strings

Question 2 True/False **(10)**
Select the correct answer from the options available

2.1 JavaScript has similarities to other programming and scripting languages. (True)
2.2 JavaScript code is case-sensitive. (True)
2.3 One should avoid using JavaScript keywords and reserved words as variable names. (True)
2.4 JavaScript keywords can be used as function names. (False)
2.5 With a scripting language, the code is interpreted as it is loaded in the client. (True)

SECTION B
Question 3 Short Answers **(20)**

3.1 Variables are used as symbolic names for values in your JavaScript application. The names of variables, are called identifiers and must conform to certain rules. Discuss the different ways of variable declarations according to your own understanding. Support your answer with appropriate examples. (5)

Variables are fundamental to all programming languages. They are data items that represent a memory storage location in the computer. Variables are containers that hold data such as numbers and strings. Variables have a name, a type, and a value. Variable names consist of any number of letters (an underscore counts as a letter) and digits. The first character must be a letter or an underscore.

3.2 No matter how great someone is at programming, sometimes scripts have errors. These errors may occur because of mistakes, an unexpected user input, an erroneous server response, and for a thousand other reasons. Identify the three types of programming errors and give a brief explanation of them. (5)

Load or Compile Time. Load-time errors are the most common errors and are caught by JavaScript as the script is being loaded.
Runtime. Runtime errors, as the name suggests, are those errors that occur when the JavaScript program actually starts running.
Logical. Logical errors are harder to find because they imply that you didn't anticipate an event or that you inadvertently misused an operator, but your syntax was okay.

3.3 Describe the characteristics of a function in JavaScript? (5)

A function is a block of statements that performs some task, they must be declared before they can be used. Normally functions are placed in the <head> tag of the HTML document to ensure that they are defined before used. To define a function, the function keyword is followed by the name of the function and a set of parentheses. The parentheses are used to hold parameters, values that are received by the function. The function's statements are enclosed in curly braces.
JavaScript functions are invoked by calling the function. A function can be called directly from within the <script> tag, from a link, or when an event is triggered.

3.4 What is the return value of the prompt method if the user doesn't enter anything? Where is the return value stored? (5)

After the user enters text into the prompt dialog box, its value is returned. This method takes two arguments: a string of text that is normally displayed as a question to the user, prompting the user to do something, and another string of text that is the initial default setting for the box. If this argument is an empty string, nothing is displayed in the box. The prompt() method always returns a value. If the user clicks

the OK button, all the text in the box is returned; otherwise null is returned. the response is returned and assigned to the variable name.

SECTION C

Question 4 Practical **(60)**

4.1 You have been hired as an exam officer at an institution. Your first task is to digitalize the grading system so that it works efficiently. You must write a program that allows the user to input marks of five assessments which were all marked out of 100(each).
Note that the assessments carry different weights as shown below:
Test 1 = 20%
Test 2=15%
Assignment =10%
Project= 15%
Exam=40%
With the above knowledge calculate the Final Mark % and grade according to given conditions:
If Final Mark percentage >= 90%: Grade A
If Final Mark percentage >= 80%: Grade B
If Final Mark percentage >= 70%: Grade C
If Final Mark percentage >= 60%: Grade D
If Final Mark percentage >= 40%: Grade E
If Final Mark percentage < 40%: Grade F (25)

```
<html>
<head>
<title>Q4.1</title>
</head>
<body>
<script type="text/javascript">
var t1 = parseInt(prompt("Enter Test1 Mark:"));
var t1W = t1 * 0.2;
var t2 = parseInt(prompt("Enter Test2 Mark:"));
var t2W = t2 * 0.15;
var assn = parseInt(prompt("Enter Assignment Mark:"));
var assnW = assn * 0.1;
var prjt = parseInt(prompt("Enter Project Mark:"));
var prjtW = prjt * 0.15;
var exm = parseInt(prompt("Enter Exam Mark:"));
var exmW = exm * 0.4;
var finMark = t1W + t2W + assnW + prjtW + exmW;
alert(finMark);
if (finMark >=90 && finMark <=100)
alert("Grade A");
else if (finMark >=80 && finMark <=89)
alert("Grade B");
else if (finMark >=70 && finMark <=79)
alert("Grade C");
else if (finMark >=60 && finMark <=69)
alert("Grade D");
else if (finMark >=40 && finMark <=59)
alert("Grade E");
else
alert("Grade F");
</script>
```

```
 </body>
</html>
```

4.2 Write a program that uses a function called LargestNum to receive 3 numbers from a user and return the largest number. The values should be entered in a form. (15)

```
<html>
<head>
<script>
                        function LargestNum()
                        {
                                var num1, num2, num3;
                                num1 = Number(document.getElementById("num1").value);
                                num2 = Number(document.getElementById("num2").value);
                                num3 = Number(document.getElementById(“num3").value);

                                if(num1>num2 && num1>num3)
                                {
                                        alert(num1+" is greatest");
                                }
                                else if(num2>num1 && num2>num3)
                                {
                                        alert(num2+" is greatst");
                                }
                                else if(num3>num1 && num3>num1)
                                {
                                        alert(num3+"is greatest");
                                }
                        }
        </script>
        </head>
        <body>
        <form>

                Enter number 1: <input type="text" id="num1"></input><br>
                Enter number 2: <input type="text" id="num2"></input><br>
                Enter number 3: <input type="text" id="num3"></input><br>
                <button onclick="LargestNum()">Check</button>
</form>
        </body>
</html>
```

4.3 Using switch statements, write a program to simulate a simple calculator. The program must perform arithmetic operations like addition, subtraction, multiplication, and division only on integers. This program takes an arithmetic operator +, -, *, / and two operands from the user. The calculation is based upon the operator entered by the user. (20)

```
<html>
<head>
<title>Q4.3</title>
</head>
<body>
<script type="text/javascript">

var operator = prompt('Enter operator ( either +, -, * or / ): ');
var number1 = parseFloat(prompt('Enter first number: '));
var number2 = parseFloat(prompt('Enter second number: '));
var result;
switch(operator) {
   case '+':
       result = number1 + number2;
      document.write(number1 +" + " +number2 +" = "+result);
      break;

   case '-':
       result = number1 - number2;
     document.write(number1 +" - " +number2 +" = "+result);
      break;

   case '*':
       result = number1 * number2;
    document.write(number1 +" * " +number2 +" = "+result);
      break;

   case '/':
       result = number1 / number2;
     document.write(number1 +" / " +number2 +" = "+result);
      break;

   default:
      document.write('Invalid operator');
      break;
}
</script>
</body>

</html>
```