SECTION A (50 MARKS)
ANSWER **ALL** QUESTIONS

Question 1   **[10]**

Direction: For each question, there are four alternatives: A, B, C and D. Choose the correct alternatives and CIRCLE it. DO NOT circle more than ONE alternative. If there is more than one choice circled, NO score will be awarded.

a)   The output of "School<h1>Logo</h1>Bhutan":

    A   School **Logo** Bhutan

    B   School **Logo**
          Bhutan

    C   School
          Logo Bhutan

    D   School
          Logo
          Bhutan

b)   A web developer designed a blog layout using a table. For his blog content to be displayed properly on various screen sizes, he needs to use

    A   table width in pixel.
    B   table width in percentage.
    C   cell spacing in pixel.
    D   cell spacing in percentage.

c)   To make the website accessible to the public the following processes are involved.

    I.   Domain Name Registration
    II. Web Server
   III. Website design
    IV. Web Space

Choose the correct sequence which is economical.

    A   I-II-III-IV
    B   III-I-IV-II
    C   II-I-III-IV
    D   IV-II-I-III

d)   A lottery company wants to generate a random whole number between 0 to 1000000. Which one of the following code can generate the number?

    A   parseInt(Math.random()*1000000);
    B   Math.random()*1000000;
    C   parseInt(Math.random())*1000000;
    D   parseInt(1000000-Math.random());

e) Study the code given below and answer the question that follows.

```
<script>
    var a = 10;
    var b;
    sum = a + b;
    alert(sum);
    difference = b — a;
    alert(diff);
</script>
```

When the above code is executed, it alerts **30** but not **10** because there is an error in the code. This shows JavaScript is

A   a compiled language.
B   a scripting language.
C   an interpreted language.
D   a general purpose language.

f) A programmer declared an array to store varieties of laptop as shown below:

```
laptop = [“Dell”, “Acer”, “Macbook”, “Vaio”, “Lenovo”]
```

The loop that displays all elements of the array is

A   for(i=O; i<laptop.length; i++).
B   for(i=O; i<laptop.length-1; i++).
C   for(i=1; i<laptop.length; i++).
D   for(i=O; i<laptop.length+1; i++).

g) What is output of the following code?

```
<script>
    function magic(){
    varnum = 321
    sum = 0
    while(number > 0){
        rem = number % 10
        sum = sum + rem;
        number= number / 10;
    }
    alert(parseInt(sum));
    }
    magic();
```

A   1
B   6
C   32
D   321

h) Identify cells, which are created using both **colspan** and **rowspan** in the table given below.

		I	IV	
		III		
	II			

A   I, II and IV

B   I, II and III

C   II and IV

D   III and IV

i) The navigation bar of a website shown below is included in

A   Title tag of a HTML document.

B   Head tag of a HTML document.

C   Body Tag of a HTML document.

D   Script Tag of a HTML document.

j) Study the code given below and answer the question that follows:

```
<script>
var num = 100;
while( num > 0)
{
        document.write("Number" + num + "<br>");
        num += 2;
}
```

The above code should print numbers less than 100. Identify the JavaScript statement that does not produce the expected output.

A   var num = 100;

B   while(num > 0)

C   document.write("Number" + num + "<br>");

D   num+=2;

Question 2 [10]

Directions: Fill in the blanks with appropriate words or phrases.

a) The default characteristics for every item of HTML markup are defined in the

_____.

b) An image can be a link instead of text if placed between

_____ tag.

c) In order to increase the space between the cell wall and the cell content, the value

of _____ should be increased.

d) Every IP address of a device on the Internet is recorded by

_____.

e) JavaScript is used mainly for enhancing the user

_____with the webpage.

f) To find errors in programs or scripts and to eliminate them, we can use

_____ tool.

g) **If** conditional statement returns _____ value.

h) **Date**, **Math**, **Array** and **String** are an example of

_____.

i) It is secure to declare the password variable as a

_____ variable.

j) HTML tags with no content are known as

_____.

Question 3

Direction: While answering these questions, indicate briefly, your working and reasoning wherever required.

a) Write a code to generate the following output without using line break tag. [2]

> ### Plastic ban in Bhutan
>
> The Environment Commission of Bhutan has clarified that ban is on business establishments and not on the customer, who reuse and carry their own plastic bags.
>
> Plastic items banned are:
> - sales of plastic carry bags
> - doma wrappers
> - ice cream pouches

b)   Differentiate between cell spacing and cell padding with the help of illustration.   [2]

c)   A travel agent asked the web developer to design a website as early as possible. The developer used visual editor rather than text editor to meet the deadline. What could be the **TWO** common reasons?   [2]

d)   Propose **FOUR** interactive features to include in the website using JavaScript.   [2]

e) Debug the following code to produce the outputs as "The average is 80". [2]

```
<script>
    var computer = 90 var english = 70;
    var dzongkha = 80;
    var sum = computer + english + Dzongkha;
    var average = sum/3;
    alert("The average is" +average)
</script>
```

f) Arrange the code below to generate even numbers from 2 to 24. [2]

```
<script>
    i+2;
    {
    document.write(i+ "<br>")
    var i=2;
    }while (i<=25)
</script>
```

g)   Create a function with **TWO** parameters which performs the task of   [2]

- adding the values of the two parameters and
- displaying their sum on alert dialog box.

h)   Differentiate when **while** and **do while** loops are used with an example each.   [2]
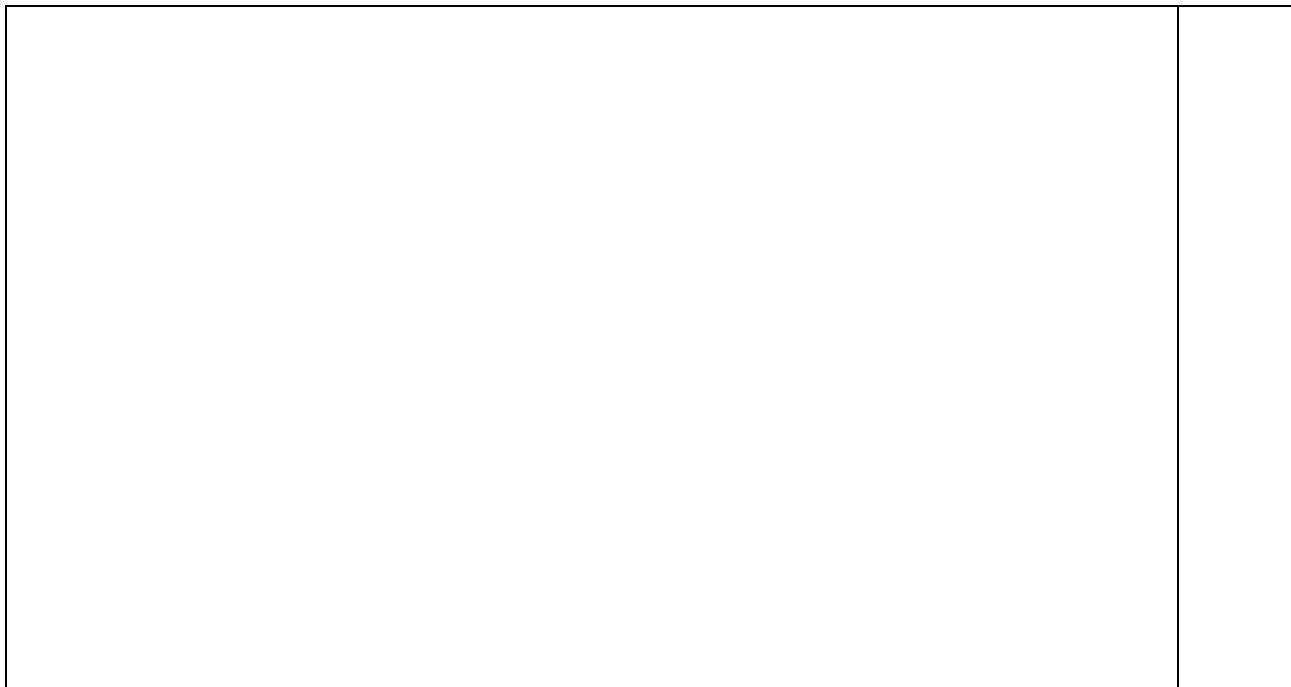
i)   Design a webpage similar to the screenshot given below: [2]

Coding is a basic literacy in the digital age, and it is important for kids to understand and be able to work with and understand the technology around them. Having children learn coding at a young age prepares them for the future.

Coding helps children with communication, creativity, math, writing, and confidence.
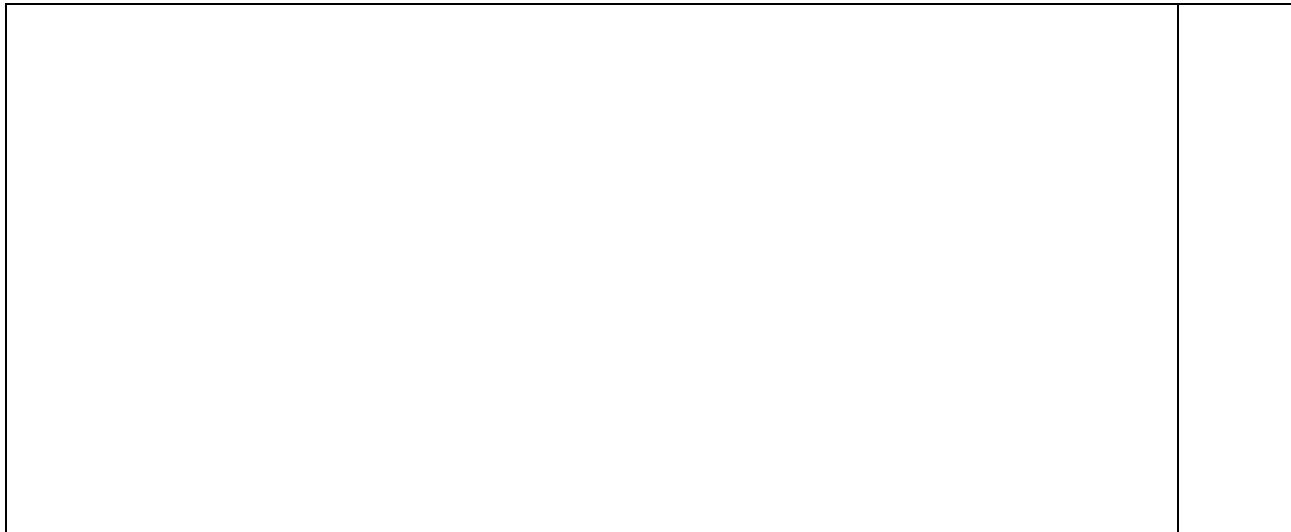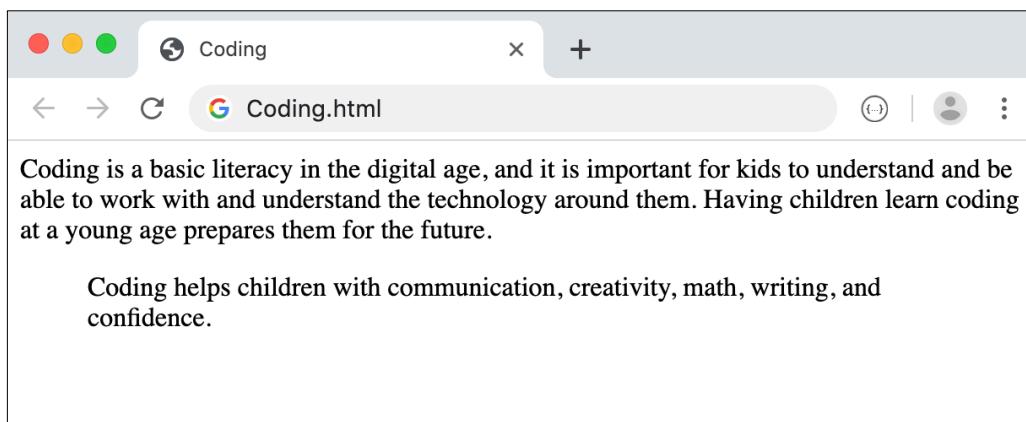
j)   Generate the output using a HTML table as shown below: [2]

Result	
Subject	**Mark**
Dzongkha	70
English	85
Mathematics	50
Total:	

k)   Explain **switch** statement with its syntax.   [2]

l)   Compare variable **name** and **username** given in the program below.   [2]

```
<script>
    var name= "Sonam"
    function func(){
    var username= "swang"
    }
</script>
```

m)   Bhutan Nature Organization designed a brochure to sensitize about their   [2]
        organization. They also hosted a website with the content similar in the brochure.
        Why do you think they hosted the website beside their brochure?

n) Do you think **Table** is better than **Frame** to design the layout of our webpage? Give **TWO** justifications. [2]

o) Distinguish **Ordered List** and **Unordered list** with the help of an example. [2]

SECTION B (50 MARKS)
ATTEMPT ANY **FIVE** QUESTIONS

Question 4

a)   Identify **THREE** user friendly considerations to be kept while designing a website.   [3]

b)   Design a webpage with header, footer and a paragraph and an image.   [3]

c)   A data entry company consults you to make their website user friendly, interactive and ensures clean data collection. Suggest a client-side scripting language with **TWO** advantages to achieve their requirements.   [2]

d)   All loop statements in JavaScript performs same task. Justify.   [2]

Question 5

a)   Differentiate between **<a>** tag and **<img>** tag.   [2]

b) Adding colors and graphics in a webpage improves user experience. Defend your answer with **THREE** reasons. [3]

c) Debug following code: [2]
```
<script>
    var num = prompt("Enter a number");
    function equalFunc(){
        if(number = 100)
        alert("Number you entered is 100")
        else
        alert("Number is not equal to 100");
    }
    equalFunc;
</script>
```

d) Create a function to return the sum of four numbers entered as the argument. The function must be executed on clicking a button in HTML document. [3]

Question 6

a) Write the output of the following HTML code. [2]

```
A<h1>seed</h1>grows with <h2>no sound</h2> but a
tree falls with huge noise.
<strike>Destruction</strike> has noise,<p>but
creation quits. This is power of silence. Grow
silently.</p>
```

b)   A vegetable vendor sold 10 kg of potato and earned Nu. 400, 50 kg of chilli and   [2]
earned Nu. 20000 and 20 kg of onion and earned Nu. 400. Present the information
using a table in your webpage.

c)   Develop a login form with the following features: [3]

i.   The form should include username, password, login button and cancel button.

ii.   The form should not submit if username or password is empty.

iii.   If username is "Kado" and password is "pwd", a message "Login Successful" should be displayed on alert dialog box.

d)   A class XII graduate is 18 years old this year. Write a code to find the year he was   [3]
      born using **Date** method of JavaScript.

Question 7

a)   Render the output given below using HTML frames.   [2]

b) Contrast Text editor with Visual editor. Give **ONE** example each. [2]

c) Compare **if-else** and **switch** conditional statement. [3]

d) JavaScript is useless without **event** and **event handler**. Support your stand with **TWO** reasons. [3]

Question 8

a) Write a HTML code that navigates from one section to another section in a single webpage. [2]

b) **www.scoe.edu.bt** is hosted in Samtse College of Education server in the campus while **www.samtsehss.edu.bt** is hosted with Bhutan Telecom Ltd. Compare the two web hosting in terms of their merits and demerits. [2]

c)   Would you prefer to substitute built-in functions with user define functions in JavaScript? State **TWO** justifications.   [3]

d)   Write the complete output of the following code.   [3]

```
var var1 = 0;

var var2 = 1;
var var3;
var num = 10
document.write(var1+"<br/>");
document.write(var2+"<br/>");
for(var i = 3; i <= num; i++)
{
var3 = var1+var2;
var1 = var2;
var2 -= var3
document.write(var3 + "<br/>");
}
```

Question 9

a) Create a webpage including an anchor, ordered list, image and align commands. [2]

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b)   Debug the code given below.   [2]

```
<form>
  First name:<br>
  <input type="textbox" name="firstname"><br>
  Last name:<br>
  <input type="textbox" name="lastname">
  <input type="radio" name="male" value="male" checked>
Male<br>
  <input type="radio" name="female" value="female" checked>
Female<br>
  <input type="radio" name="gender" value="other" checked>
Other
  <input type="check" name="vehicle" value="Bike"> I have a
bike<br>
  <input type="check" name="vehicle" value="Car "> I have a
car<br>
  <input type="check" name="vehicle" value="Boat" checked> I
have a boat<br>
</form>
```

c)   A teacher recorded the marks of 20 students in an array. He wants to find the total   [3]
       number of students in each range, 100 – 70, 70 – 50 and less than 50. Write a
       program that would help to accomplish his task.

d)   The code and its output are given below. Implement it using **while** loop.   [3]

Code	Output
```for(i=0; i<=10; i++){``` ```for(x=0; x<=i; x++){``` ```document.write("*");``` ```}``` ```document.write(" ");``` ```}```	`*` `**` `***` `****` `*****` `******` `*******` `********` `*********` `**********` `***********`

Question 10

a)   Design a form using table to layout as shown below.   [2]

Name	
Gender	Male ☐ Female ☐
Submit Reset	

b) Write a HTML markup to include period wise class timetable. [2]

c) Examine the variable **gnh** in the code given below and comment on the merits and demerits on its data type. [3]

```
var gnh = "Bhutan";
alert("gnh contains a string"+gnh)
var gnh = 100000;
alert("gnh contain a number type"+gnh)
```

d) Differentiate between variables **name** and **marks** given below in terms of their characteristics. [3]

```
var name = "Gaki Pelzom"
var marks = [45, 56,77,99])
```

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