



**kasneb**

**DICT LEVEL III**

**PRINCIPLES OF WEB DEVELOPMENT**

**TUESDAY: 24 November 2020.**

**Time Allowed: 3 hours.**

**Answer ALL questions. Marks allocated to each question are shown at the end of the question.**

**QUESTION ONE**

(a) Distinguish between GET and POST methods. (2 marks)

(b) A programmer has the following function in his PHP file for connecting to a database:

```
$db = MySQL_connect (servername, username, password);
```

Describe the purpose of the above function including the parameters specified. (4 marks)

(c) A web developer has developed a CSS file and has saved it with a CSS extension. He intends to insert it in an HTML file that uses the external style sheets.

**Required:**

Explain the tag and attribute the developer would use to execute the above task. (6 marks)

(d) Write HTML code that would render the following output on a browser:

**Major highways in Nairobi:**

- Uhuru Highway
- Thika Road
- Mombasa Road

**Within Nairobi**

1. Moi Avenue
2. Kenyatta Avenue
3. Haille Selassie

(8 marks)

**(Total: 20 marks)**

**QUESTION TWO**

(a) Outline three methods for creating a motion tween animation. (6 marks)

(b) The following code was developed by a student who intended to insert an image named "Baraka.gif" in a website:

```
<!DOCTYPE html>
<html>
<head>
<style>
    img {width:100%;}
</style>
</head>
<body>
<img src = "Baraka.gif" alt = "Baraka image"
    width = "128" height = "128">
</body>
</html>
```



**Required:**

- (i) Explain why the image would appear stretched beyond the 128 pixels declared within `<img>` tag when rendered on a browser. (2 marks)
- (ii) Rewrite the code within the `<img>` tag so that the image displays correctly. (2 marks)
- (c) With the aid of an example, describe a “breadcrumb” as used in web design. (3 marks)
- (d) The following five towns in Kenya are to be displayed on a web browser:

Mombasa, Nairobi, Nakuru, Eldoret and Kisumu.

**Required:**

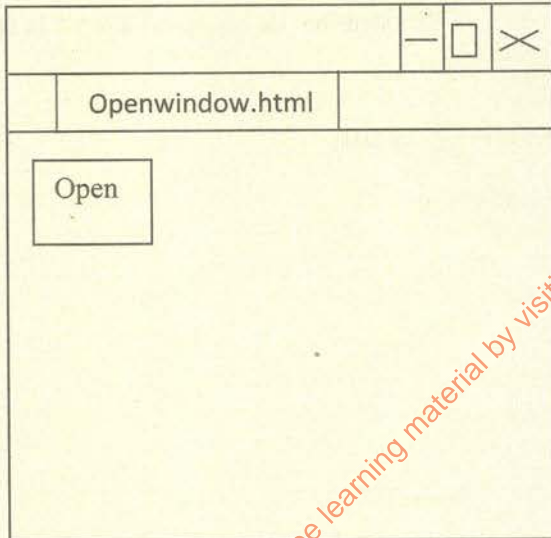
- (i) Show how you would attach these names in an array named “town” in Javascript. (2 marks)
  - (ii) Write Javascript code that uses a “for loop” to display the towns in (d) (i) above in a single column. (5 marks)
- (Total: 20 marks)**

**QUESTION THREE**

- (a) “A good guideline when designing websites is to design for the lowest common denominator”.

With respect to the above statement, explain four guidelines that could assist in choosing appropriate web design specifications taking into consideration the current trends. (4 marks)

- (b) In the windows below, one contains a button and the other contains an image of type Gif.



**Required:**

- (i) Using a method called `openwin()`, write a JavaScript code to open the window on the click of the button “Open”. (4 marks)
- (ii) Create a page using HTML and define a method named `random_colour()` which is to be called when you click on the body of the `Openwindow.html`. This method should generate a random number, which could be used to set the background colour. (4 marks)
- (c) (i) Mwenda Pole is a business enterprise that has established its presence on the e-commerce space. The business intends to restructure owing to recent upsurge in customer orders.

**Required:**

As a web development consultant, suggest to the management four activities that they could undertake in the restructuring. (4 marks)

- (ii) Simon, a new student in web design, is having trouble understanding the relationship between static and dynamic websites as well as the differences between the two.

Explain the fundamental differences and similarities between the two.

(4 marks)  
**(Total: 20 marks)**



#### QUESTION FOUR

- (a) Examine three technological limitations in adopting e-commerce in Kenya. (6 marks)
- (b) Highlight six services offered by web hosting companies. (6 marks)
- (c) Sketch an interface that would be rendered by the code below on a web browser:

```
<table>
  <tr>
    <td> cell [1,1] </td>
    <td colspan = "2"> cell [2,1] </td>
  </tr>
  <tr class = "2">
    <td> cell [1,2] </td>
    <td rowspan = "2"> cell [2,2] </td>
    <td> cell [3,2] </td>
  </tr>
  <tr class = "3">
    <td> cell [1,3] </td>
    <td> cell [2,3] </td>
  </tr>
</table>
```

(8 marks)

(Total: 20 marks)

#### QUESTION FIVE

- (a) State the purpose of the following attributes used with the video element on the web:

- (i) Preload. (1 mark)
- (ii) Muted. (1 mark)
- (iii) Loop. (1 mark)
- (iv) Poster. (1 mark)

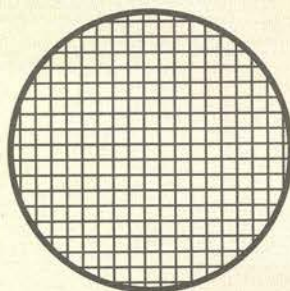
- (b) (i) At first sight, the <canvas> element looks like <img> element for a novice web developer.

Differentiate clearly between the two elements as used in HTML graphics. (2 marks)

- (ii) Using the <canvas> element, write down the code statements that would trigger a browser to provide a text description and an image of an item on sale.

Use the example of an image displaying a clock whose height and width is 150 pixels each and with a price of Sh.2,000. (4 marks)

- (iii) The image below is an SVG graphics:



**Required:**

Using HTML, demonstrate how the image could have a fill colour and border of yellow and green respectively. (2 marks)

(c) Many images including those out of the camera are usually too large resulting in a slow website.

Describe two techniques that you would use to optimise these images for use in a website.

(4 marks)

(d) Darajani online sales portal was recently updated and a facelift done so as to adopt the company's mission statement. After the update, the management have noticed that they are getting negative feedback.

**Required:**

Formulate a fact sheet that clearly justifies the customers response while at the same time offers solutions that could be adopted by the organisation.

(4 marks)

(Total: 20 marks)

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