

DICT LEVEL III

PRINCIPLES OF WEB DEVELOPMENT

TUESDAY: 27 November 2018.

Time Allowed: 3 hours.

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

QUESTION ONE

(a) Differentiate between each of the following pairs of terms as used in HTML development:

- (i) <div> and <frame> (2 marks)
- (ii) sessionStorage and localStorage (2 marks)

(b) (i) Consider the code below:

```
div {
    background-color : #ccc;
    background-image : url ("img.png");
    background-repeat : no-repeat;
    background-position : right top;
}
```

Required:

Using cascading styles sheets (CSS), rewrite the above code as a shorthand properties presentation. (2 marks)

- (ii) Citing examples, show two possible ways in which CSS styles could be applied to a web page. (4 marks)
 - (c) Outline three drawbacks and two benefits of using an image format for vector graphics in website design. (10 marks)
- (Total: 20 marks)**

QUESTION TWO

(a) Explain the difference between each of the following pair of terms in the context of table rendering:

- (i) Margin and padding. (2 marks)
- (ii) Border and background. (2 marks)

(b) Write HTML code that when a picture (notes.png) is clicked, it opens a website <https://kasneb.or.ke> in a new window. (2 marks)

(c) Highlight four differences between "GET" and "POST" hypertext transfer protocol (HTTP) methods. (4 marks)

(d) Write HTML code to render the following when run on a browser:

(i) List of items shown below:

- Item 1
 - Item (i) nested.
 - Item (ii) nested.
 - Item (iii) nested.
- Item 2
- Item 3

(4 marks)

(ii) The table below such that it covers half of the width of the browser:

H1	H2	H3
C1	C2	
	C3	C4

(6 marks)

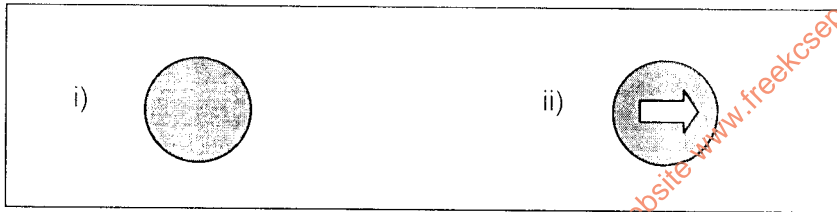
(Total: 20 marks)

QUESTION THREE

(a) Describe the following coding technologies as used in website development:

- (i) Site markup. (2 marks)
- (ii) Client-side scripting. (2 marks)
- (iii) Server-side scripting. (2 marks)
- (iv) Database technology. (2 marks)

(b) The images below show an animation of a button using JavaScript technique. When a mouse is moved over the first image it immediately transforms to the second image.



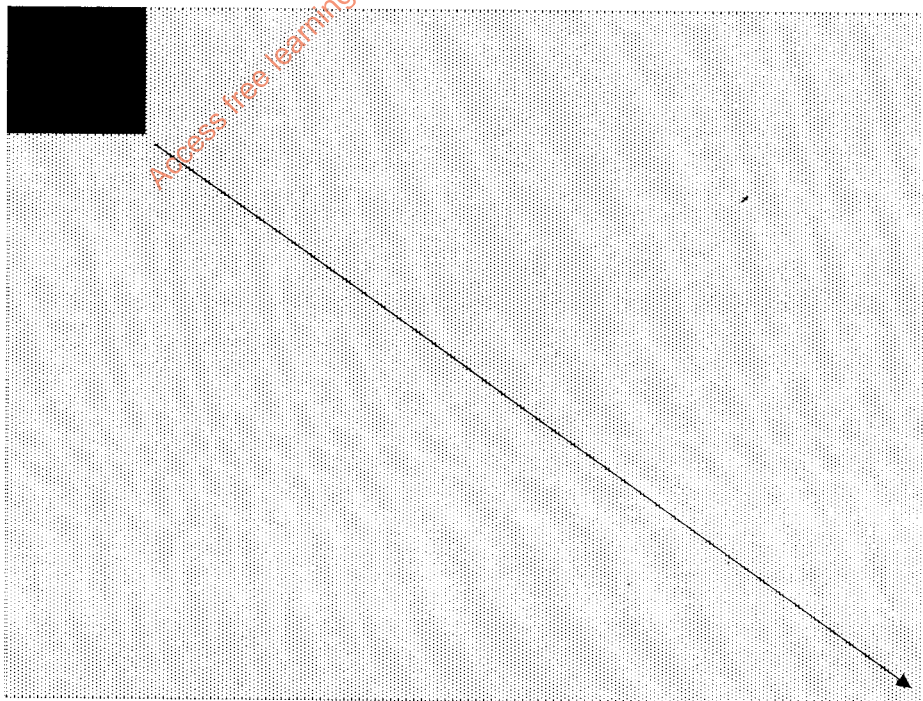
Required:

Explain how such an effect is achieved.

(4 marks)

(c) A website developer has created the following page:

Click Me



The developer has used HTML code below:

```
<!DOCTYPE html>
<html>
<style>
#myContainer{
    Width : 400 px;
    Height : 400 px;
    Position: Relative;
    Background : grey;
}
#myAnimation{
    Width : 50 px;
    Height : 50 px;
    Position: Absolute;
    Background-color : red;
}
</style>
<body>
<p> <button onClick = "MoveTheSquare()" > click Me </button> </p>
<div id = "mycontainer">div id = "myAnimation" > </div > </div>
<script> //insert function here </script>
</body>
</html>
```

Required:

Create the "MoveTheSquare" function which will move the small square in the direction of the arrow when the "Click Me" button is clicked. (8 marks)

(Total: 20 marks)

QUESTION FOUR

- (a) James Miga has created a MySQL database named "MyDatabase" in the root directory of his computer. He wishes to connect the database with the local host.

Required:

Citing a reason for each, advise James Miga on:

- (i) Three variables he could use to create a database PHP connection file. (3 marks)
- (ii) Create the database connection file in PHP. (6 marks)
- (b) (i) Write a HTML code to show how you would use the <object> tag to manually insert a high quality.swf file named "MyFlashfile" in an x-shockwave-flash application. (4 marks)
- (ii) You are a web developer with XYZ Company Limited. One of your clients has sent you the following:

"My web server does not host Flash.swf file. How do I insert the flash into my webpage?".

Required:

Outline three steps that you would follow to upload the Flash.swf file to the web server as requested by the client. (3 marks)

- (c) "A web service allows access to application code using standard programming and internet technologies".

With reference to the above statement, describe two ways in which to invoke web services.

(4 marks)

(Total: 20 marks)

QUESTION FIVE

(a) Describe the following terms:

- (i) Web feed. (2 marks)
- (ii) Web API. (2 marks)
- (iii) Website plugin. (2 marks)

(b) (i) The management of Njimbiwe Holdings Limited have approached you to design a website for their company. Prepare a list of three activities that you would undertake during the design phase. (3 marks)

(ii) Cross-site scripting (XSS) is one of the vulnerabilities experienced in web pages. Analyse three web page features likely to have cross-site scripting vulnerabilities. (3 marks)

(c) Write the HTML code that would output the form below when rendered on a web browser:

ENTRY FORM

Enter your Name:

Enter your Age:

Enter your Address:

Sex: (Choose either) Female
 Male

Languages Known: (Select at least one)

- C
- C++
- VB
- JAVA
- ASP
- Others

Enter your password:

(8 marks)
(Total: 20 marks)

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