

CICT PART II SECTION 4

WEB DESIGN AND e-COMMERCE

FRIDAY: 24 May 2019.

Time Allowed: 3 hours.

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

QUESTION ONE

- (a) Highlight three benefits of following the standards documented by the world wide web consortium (W3C) during the design and development of a website. (3 marks)
- (b) With the aid of software tools examples, distinguish between “frontend” and “backend” categories of web development. (4 marks)
- (c) Suggest four strategies that you could employ to improve the speed of your website. (4 marks)
- (d) Consider the table below:

Unit No.	Unit Title	Teaching Hours	Distribution of Theory Hours			
			R Level	U Level	A Level	Total Marks
I	Introduction to Web Development	2	4	4	0	8
II	Software Engineering	6	0	2	6	8
	<b>Total</b>	8	4	6	6	16

Write HTML code that will render the table above on a web browser.

(9 marks)

(Total: 20 marks)

QUESTION TWO

- (a) The management of Baraka Enterprises Limited have recently decided to adopt a cloud based as opposed to on-premise enterprise resource planning (ERP) system.  
  
Outline four factors that could have influenced Baraka Enterprises Limited to adopt a cloud based ERP solution. (4 marks)
- (b) (i) Define a “CSS pre-processor”. (2 marks)  
(ii) Summarise four reasons why CSS pre-processors are still used in the developing websites. (4 marks)  
(iii) Justify why you might discourage someone from using CSS pre-processors. (2 marks)
- (c) Study the HTML code below:

```
<html>
<head>
<title>Image Tag</title> </head>
<body>
<h3 align = “centre” style = “color:red”>Illustrating Images </h3> <hr>
<p>
<img src = “flower.bmp” align = “right” height = “100” width = “100”/>
This image is right aligned with the text.</p>
<br> <br> <br> <br> <hr>
<p>
<img src = “flower.bmp” align = “left” height = “100” width = “100”/>
This image is left aligned with the text. </p>
```

```

<br> <br> <br> <br> <br>
This image is centre aligned with the text.
<img src = "flower.bmp" align = "middle" height = "100" width = "100"/>
<br> <br> <br> <br> <br>
This image is bottom aligned with the text.
<img src = "flower.bmp" align = "bottom" height = "100" width = "100"/>
<br> <br> <br> <br> <br>
This image is top aligned with the text.
<img src = "flower.bmp" align = "top" height = "100" width = "100"/>
</body>
</html>

```

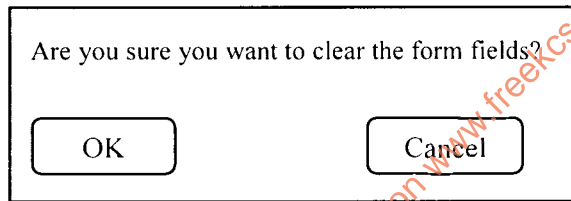
**Required:**

Sketch the output that would be displayed on rendering the above HTML code on a browser.

(8 marks)  
(Total: 20 marks)

**QUESTION THREE**

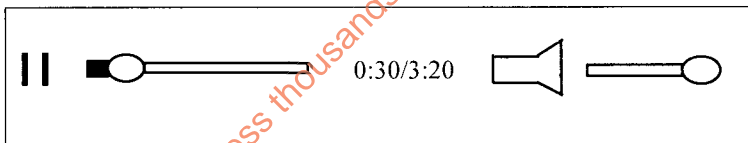
- (a) Outline four profit models used in e-commerce. (4 marks)
- (b) Highlight three types of market models for e-procurement solutions. (3 marks)
- (c)
  - (i) Define "digital watermark" as used in e-commerce security. (1 mark)
  - (ii) Outline three characteristics of digital watermarks. (3 marks)
- (d) Write Javascript code that could be integrated into a HTML form to prevent a website visitor from clearing form field elements accidentally by displaying the confirmation dialog box below:



(4 marks)

- (e) Write HTML code that plays an audio file; Percussion Gun by artist, White Rabbits whose path is "percussiongun.mp3" while displaying on a web browser as shown below:

Play "Percussion Gun" by White Rabbits



(5 marks)

(Total: 20 marks)

**QUESTION FOUR**

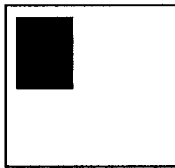
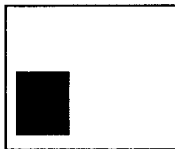
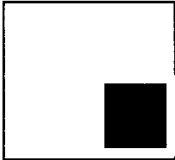
- (a) Predict how the following emerging trends are likely to impact on the design and development of websites:
  - (i) Artificial intelligence. (2 marks)
  - (ii) Variable fonts. (2 marks)
  - (iii) Voice user interface. (2 marks)
- (b)
  - (i) In relation to e-commerce, describe an SSL certificate. (2 marks)
  - (ii) A data protection legislation controls how personal information is used by organisations in a country. It defines among others, the functions of a data commissioner.

**Required:**

Suggest four functions of a data commissioner in the above context.

(4 marks)

- (c) A web designer has created an animation that shifts the position of a 100 by 100 pixel square, relative to a chosen canvas of 200 by 200 pixels as shown in the series of frames below:



The square smoothly transits from each position in 1 second and changes colour from red to yellow to blue to green then back to red at its original position.

**Required:**

Compose the HTML code the designer could have used to create the above animation.

(8 marks)

**(Total: 20 marks)**

**QUESTION FIVE**

- (a) Explain the following HTML elements used to embed media in websites:

- (i) `iframe`. (2 marks)
- (ii) `Sandbox`. (2 marks)
- (iii) Application Programming Interface (API). (2 marks)
- (iv) HTTP live streaming video (HLS). (2 marks)

- (b) Suggest two reasons for widespread use of mobile payment (mpayment) solutions. (2 marks)

- (c) Discuss two services provided by Internet Service Providers (ISPs) that web programmers rely on during and after hosting websites. (4 marks)

- (d) You have been tasked to develop a simple interface shown below for collecting job application documents from users.

The image shows a browser window titled "JOB APPLICATION". At the top right of the window are standard window controls: a minus sign, a square, and an "X". The form contains the following elements:

- The title "JOB APPLICATION" centered at the top.
- A label "Name" followed by a rectangular input field.
- A label "Email" followed by a rectangular input field.
- A label "Upload document" followed by a rounded rectangular button labeled "Choose file".
- A rounded rectangular button labeled "Submit" located at the bottom left of the form area.

**Required:**

Write HTML code that will render the interface below on a web browser.

(6 marks)  
(Total: 20 marks)

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