2920/304
**INTERNET BASED PROGRAMMING**
November 2017
Time: 3 hours

# THE KENYA NATIONAL EXAMINATIONS COUNCIL

# DIPLOMA IN INFORMATION COMMUNICATION TECHNOLOGY

## MODULE III

### INTERNET BASED PROGRAMMING

### 3 Hours

## INSTRUCTIONS TO CANDIDATES

*This paper consists of EIGHT questions.*
*Answer any FIVE of the EIGHT questions in the answer booklet provided.*
*All questions carry equal marks.*
*Candidates should answer the questions in English*

**This paper consists of 4 printed pages.**

**Candidates should check the question paper to ascertain that all the
pages are printed as indicated and that no questions are missing.**

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**Turn over**

1. (a) (i) Outline two types of Uniform Resource Locators (URLs) that could be applied on a web page. (2 marks)

   (ii) Explain two uses of comments in web development. (4 marks)

   (b) Distinguish between *submit* and *reset* commands as applied in HTML forms. (4 marks)

   (c) Afya Technologies Limited recently developed a company website. Explain three benefits the company is likely to realize from this move. (6 marks)

   (d) The following is a JavaScript segment code. Use it to answer the question that follows.

```
function squares(size)
{
    var sqr;
    for (var i=1; i<=size; i++)
    {
        sqr = i * i;
        alert(sqr);
    }
}
```

   Interpret the code. (4 marks)

2. (a) (i) Outline **four** factors to consider when building a website for a business enterprise. (2 marks)

   (ii) State **two** uses of the Common Gateway Interface (CGI) in web authoring. (2 marks)

   (b) Distinguish between *client-side* and *server-side* approaches to web programming. (4 marks)

   (c) (i) Describe **one** type of animation used in JavaScript. (2 marks)

   (ii) Write a JavaScript function that prompts a user to enter a color. The function then uses the color entered to set the link color within the existing web page. (4 marks)

   (d) Maria, a web designer, inserted images on a website using the portable network graphics (PNG) file format. Explain **three** benefits of this file format. (6 marks)

3. (a) State **two** web-programming languages other than HTML and JavaScript. (2 marks)

   (b) Jane would like to host a website. She was advised to lease a dedicated web server from a local ISP. Explain **three** reasons for this advice. (6 marks)

   (c) Write a JavaScript function that accepts item price, tax rate and cash. The function then outputs "yes" or "no" in an alert box if the cash entered is adequate or not respectively to purchase an item. (6 marks)

(d) The following is an HTML code created by a student. Use it to answer the question that follows:

```
<html>
<body>
<table border="2">
  <tr>
    <th rowspan="2">Name</th>
    <th colspan="2">Telephone Numbers</th>
  </tr>
  <tr>
    <td>Home</td>
    <td>Office</td>
  </tr>
  <tr>
    <td>John Doe</td>
    <td>0722xxxxxx</td>
    <td>0731xxxxxx</td>
  </tr>
</table>
</body>
</html>
```

Sketch the output generated when the code is run on a web browser. (6 marks)

4. (a) Outline **four** reasons for the current popularity of open source software in web programming. (4 marks)

(b) Describe each of the following HTML table tags:

(i) <caption> (2 marks)

(ii) <thead> (2 marks)

(iii) <colgroup> (2 marks)

(c) Maji Mazuri Company has a website whose security is a major concern to the management. As a web designer, explain **three** possible security threats to the website. (6 marks)

(d) Trimax Limited Company would like to host its website. Explain **two** factors the company would consider in choosing an ISP. (4 marks)

5. (a) Outline **four** challenges associated with *cloud computing*. (4 marks)

(b) Explain **two** benefits of a dynamic website to an organization. (4 marks)

(c) Write a JavaScript code embedded in an HTML document that prompts a user to enter a number. The code then displays the next three numbers in the series. (6 marks)

(d) Figure 1 shows a form on a webpage. Use it to answer the question that follows:

```
┌─────────────────────────────────┐
│ Name: [                    ]     │
│                                  │
│   ⊙ Male                         │
│                                  │
│   ⊙ Female                       │
│                                  │
│ [ Submit ]                       │
└─────────────────────────────────┘
```

**Figure 1**

Write HTML code that would generate the form when run on a web browser.

(6 marks)

6. (a) (i) State **four** web authoring applications in the market today. (2 marks)

(ii) Outline **two** factors to consider when designing forms on a webpage. (2 marks)

(b) Mary, a web designer used frames to develop a webpage. Explain **three** benefits she is likely to realize from this move. (6 marks)

(c) Peter, a webmaster advised a client to host a website on own server. Explain **three** possible reasons for this advise. (6 marks)

(d) Write HTML code that would insert an image named *mountain.jpg* into a webpage. The image has *mountain view* as its alternative name, a width of 304px and a height of 228px. (4 marks)

7. (a) Outline **four** examples of Internet protocols. (4 marks)

(b) Mary created a webpage and would like to embed a video to it. State four video file formats she is likely to use. (4 marks)

(c) Write HTML code that would link a given webpage to *http://www.helb.ac.ke* and open in a blank page with the heading "welcome to HELB services!". (4 marks)

(d) (i) Distinguish between a *template* and a *library* as used in web design. (4 marks)

(ii) Explain **two** uses of Active Server Page (ASP) technology in web design. (4 marks)

8. (a) Outline **four** characteritics of a good web design. (4 marks)

(b) Anita, a web developer would like to create a website. Explain **three** criteria she would use when choosing a web programming language. (6 marks)

(c) Explain **two** disadvantages of developing a website using templates. (4 marks)

(d) Write HTML code to generate a form that allows a student to enter *student number*, select units: *MIS, IBP,* and *DATA COM,* through a list box, and submit or else cancel. (6 marks)

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