

2920/304
INTERNET BASED PROGRAMMING
November 2022
Time: 3 hours



THE KENYA NATIONAL EXAMINATIONS COUNCIL
DIPLOMA IN INFORMATION COMMUNICATION TECHNOLOGY

MODULE III

INTERNET BASED PROGRAMMING

3 hours

INSTRUCTION TO CANDIDATES

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

This paper consists of 5 printed pages.

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


1. (a) State **four** types of multimedia elements that may be displayed on a web page. (2 marks)
- (b) With the aid of an example in each case, explain **two** ways in which web programming languages are categorised. (4 marks)
- (c) Distinguish between each of the following pairs of tags as used in Hyper text Mark up Language (HTML).
- (i) <title> and <script> (4 marks)
- (ii) <link> and <meta> (4 marks)
- (d) A web developer was required to design a sitemap before developing a website for a client. Explain **three** reasons for this approach. (6 marks)
2. (a) Outline **four** benefits of using *pure text editor* when developing a website. (4 marks)
- (b) Write a HTML statement that would implement each of the following instructions on a web browser:
- (i) a red horizontal line whose width is 70% of the page width and has thickness of 20 pixels;
- (ii) the text "My best school" displayed as a paragraph and the word *school* is subscripted. (4 marks)
- (c) A college intends to select a company that can host their website. Explain **three** factors that the college should consider when selecting the company. (6 marks)
- (d) Explain **one** reason for effecting each of the following operations to secure information in a website. (6 marks)
- (i) Using the protocol *https* in the website address;
- (ii) Using web application firewall;
- (iii) Carry out daily testing on the site.
3. (a) Distinguish between *a scheme* and *a host* as used in Uniform Resource locator (URL) structure. (4 marks)
- (b) Explain **three** attributes that may be used in an ordered list tag in HTML. (6 marks)

- (c) Write a HTML code that would display the following form when run on a browser. (10 marks)

Best colours:

black
select a colour
black
blue
green
orange

Please tell us more about your best colour



Select Color:

Red
 Orange

4. (a) The following is a HTML statement. Use it to answer the questions that follow.
- ```
The main Section
```
- (i) Outline the use of the tag `<a>` in the statement. (2 marks)
- (ii) Explain **three** attributes that can be added to the tag. (6 marks)
- (b) A company's management appointed a committee to evaluate the content to be placed in their website. Explain **three** qualities of the content that the committee should consider. (6 marks)
- (c) Write a JavaScript program embedded in HTML that would declare and assign the values 700, 120, 330, 90 and 190 into an array. The program should then compute the sum of the five values in the array and display the results through the use of an alert box. (6 marks)
5. (a) Outline **three** reasons for gathering *user requirements* before developing a web site. (3 marks)
- (b) Johannes included the following HTML statement on a web page he developed.
- ```

```
- (i) Outline the function of each of the following in the statement:
- (I) `img_girl.jpg`; (1 mark)
- (II) `Girl in a blue jacket`; (1 mark)
- (III) `width = 500` and `height = 600`. (1 mark)
- (c) Explain **three** reasons that may cause an image not to load in a web browser. (6 marks)

- (d) Table 1 shows a criterion used to allocate houses to clients by a landlord based on monthly rent.

Monthly Rent	Type of House
Greater than 5000 and less than 10000	One bedroomed House
Greater than 10,000 and less than 15000	Two bedroomed House
Greater than 15000 and less than 20000	Three bedroomed House
Any other	No allocation for that amount

Table 1

Write a JavaScript program embedded in HTML that would prompt a user to enter the monthly rent. The program should determine and display the type of house on the browser. Use the *if* construct. (8 marks)

6. (a) Explain **two** attributes of a form as used in HTML. (4 marks)
- (b) Explain the effect of each of the following attributes when used on an option button in HTML.
- (i) `disable`;
- (ii) `label`. (4 marks)
- (c) Write a HTML statement that would perform each of the following when run on a web browser:
- (i) link to an email address *info@nairobi.com* when the text *Send Comment* is clicked. (2 marks)
- (ii) download an image whose file name is *ourflag.jpg* located in the images directory when the text *download* is clicked. (2 marks)
- (iii) link to the text named *bottom* when the text *Go bottom* is clicked. (2 marks)
- (d) Write a JavaScript program embedded in HTML that would display all the multiples of 5 starting from 30 to 100 on a console window. Use a while loop. (6 marks)
7. (a) Outline **four** characteristics of *Get request method* as used in HTML forms. (4 marks)
- (b) The load time is the time it takes to download and display the entire content of a web page. Explain **three** considerations that a web developer should consider to improve the load time. (6 marks)
- (c) Write a HTML code that will display the following table when run on a web browser.

Subjects	Date
Database Computer application Data communication	12/08/2022
Communication Skills	13/08/2022

Set the amount of space between the borders of the outer table cells and its contents to be 10 pixels and all the borders to be red for both tables. (10 marks)

8. (a) Outline **two** examples of mouse events as used in JavaScript program. (2 marks)
- (b) Identify the type of web testing applied in each of the following cases giving a reason for your answer:
- (i) Checking for orphan pages;
 - (ii) Checking to ensure that web directories and files are not accessible unless given download option;
 - (iii) Checking whether website can operate on most browsers and devices (6 marks)
- (c) Explain **three** methods that can be used to convert string variables to numbers in a JavaScript program (6 marks)
- (d) Write a JavaScript program embedded in HTML that would use a function to compute area of a triangle whose base length is 400 and height is 100. The program should display the results on the browser as shown in the statement below.
- The area of the triangle is ...* (6 marks)

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