



PAMIBIA UNIVERSITY
OF SCIENCE AND TECHNOLOGY

FACULTY OF COMPUTING AND INFORMATICS

DEPARTMENT OF INFORMATICS

QUALIFICATION: Bachelor of Informatics, Bachelor of Computer Science, Bachelor of Geo-Information Technology, Bachelor of Entrepreneurship	
QUALIFICATION CODE: 07BAIF,07BACS, 07BGIT, 07BENT	LEVEL: 5
COURSE: Web Development Fundamentals	COURSE CODE: WDF521S
DATE: November 2019	SESSION: 1
DURATION: 3 Hours	MARKS: 100

FIRST OPPORTUNITY EXAMINATION QUESTION PAPER	
EXAMINERS:	Ms Helena Nahum Ms Irja Shaanika Mr Nkululeko Mthembo Ms Sinte Mutelo Mr Veerab Paduri Mr Gabriel Nhinda
MODERATOR:	Mr Simon Muchinenyika

INSTRUCTIONS
1. Answer ALL the questions. 2. Write clearly and neatly. 3. Number the answers clearly.

THIS QUESTION PAPER CONSISTS OF 8 PAGES (Excluding this front page)

Section A: Multiple choice

[20 Marks]

Choose one correct answer

1. HTML is what type of language?
 - a) Scripting Language
 - b) Markup Language
 - c) Programming Language
 - d) Network Protocol
 - e) Hyper text

2. HTTP is
 - a) the predecessor to HTML
 - b) the transfer protocol of the web
 - c) the markup language understood by the browser
 - d) the URL of a web page
 - e) the web server

3. What should be the first tag in any HTML document?
 - a) <head>
 - b) <title>
 - c) <html>
 - d) <document>
 - e) <author>

4. Which method will send form data via the URL?
 - a) get
 - b) post
 - c) action
 - d) Only a and b
 - e) None of the above

5. Which of the following HTML attributes is used to define inline styles?
- a) <styles>
 - b) <attribute>
 - c) <style>
 - d) <format>
 - e) None of the above
6. Which of the following is the correct CSS syntax?
- a) body: color = black
 - b) body {color: black;}
 - c) {body; color: black}
 - d) {body: color = black(body)}
 - e) None of the above
7. The href attribute in the link tag specifies the:
- a) Destination of a link
 - b) Link
 - c) Hypertext
 - d) None of the above
 - e) Attribute
8. What is the correct order for table tags
- a) <table><td><tr>
 - b) <tr><td>
 - c) <table><tr><td></tr></td></table>
 - d) <table><tr><td></td></tr></table>
 - e) <table><td><tr></tr></td></table>
9. The term _____ refers to the ways in which a web page can be made more usable by people with visual disabilities.
- a) cascading
 - b) standards
 - c) accessibility
 - d) usability
 - e) contrast

10. Where in an HTML document is the correct place to link to an external style sheet?
- a) In the <footer> section
 - b) In the <body> section
 - c) In the <head > section
 - d) In the <link> section
 - e) None of the above
11. Apart from tag, what other tag makes text bold?
- a) <fat>
 - b)
 - c) <black>
 - d) <bold>
 - e) <big>
12. Which event occurs when the user clicks on an HTML element?
- a) onclick
 - b) onchange
 - c) onmouseover
 - d) onmouseclick
 - e) onselect
13. The following CMS user role is responsible for managing site backups.
- f) Content Publisher
 - g) Content Creator
 - h) Site Manager
 - i) Super administrator
 - j) All the above
14. The most important goal in web design is
- a) impressive graphics
 - b) site usability
 - c) interesting links
 - d) attractive home page
 - e) use of metaphors

15. Inside which HTML element do we put the JavaScript code?

- a) <scripting>
- b) <javascript>
- c) <.js>
- d) <script>
- e) None of the above

16. How does a FOR loop start?

- a) for (i = 0; i <= 5; i++)
- b) for (i = 0; i <= 5)
- c) for i = 1 to 5
- d) for (i <= 5; i++)
- e) for (i <= 10)

17. How can you make a numbered list?

- a) <list>
- b) <dl>
- c)
- d)
- e)

18. Which input type defines a slider control?

- a) search
- b) controls
- c) range
- d) slider
- e) non of the above

19. Which of the following is **NOT** a publisher's role?

- a) Everything a creator can do
- b) Determine if content should be published
- c) They can publish immediately
- d) Keeping the CMS up to date
- e) None of the above

20. Where in an HTML document is the correct place to link to embedded JavaScript?

- a) In the body section
- b) In the head section
- c) In the script section
- d) A) and B)
- e) A and C)

Section B: Discussions

[50 Marks]

1. Define the following terms in relation to web development: **[10 Marks]**
 - a) User Experience Design **(2 Marks)**
 - b) Wireframe **(2 Marks)**
 - c) Domain Name System **(2 Marks)**
 - d) Digital signature **(2 Marks)**
 - e) Template Management **(2 Marks)**

2. Good website design contributes to the usability of a website. The following questions relate to web design principles and guidelines: **[19 Marks]**
 - a) What factors influence user experience? **(7 Marks)**

 - b) Name and explain four visual design principles. **(8 Marks)**

 - c) Differentiate between a fixed and fluid page layout design. **(4 Marks)**

3. The following questions are in relation to information security: **[11 Marks]**

a) Mention any five security vulnerabilities? **(5 Marks)**

b) With reference to the information security triad/triangle, explain what impact a security breach might have on your system? **(6 Marks)**

4. The following questions are in relation to CSS(Cascading Style Sheets): **[10 Marks]**

a) What are the three types CSS styling and how they differ? **(6 Marks)**

b) Give any four benefits of using CSS. **(4 Marks)**

Section C: HTML, CSS and JavaScript**[30 Marks]**

1. Write the HTML code to create the HTML Table below.

[18 Marks]**Student Information**

Student Number	Student Name	Program	Year
202015972	Johannes P	Computer Science	First Year
200547852	Marcus H	Communications	Second Year
201326599	Shikongo I	Mathematics	Third Year
End			

2. Use JavaScript to achieve the following:

[12 Marks]

a. Declare a variable x.

(2 Marks)

b. Declare a function that calculate the sum of two numbers.

(4 Marks)

c. Use an if statement to check if the value of x is greater than 100 and alert the user that "The value of x is too high".

(4 Marks)

d. Call/invoke a function.

(2 Marks)***End of Paper***



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FIRST OPPORTUNITY EXAMINATION MEMORANDUM	
EXAMINERS:	Ms Helena Nahum Ms Irja Shaanika Mr Nkululeko Mthembo Ms Sinte Mutelo Mr Veerab Paduri Mr Gabriel Nhinda
MODERATOR:	Mr Simon Muchinenyika

INSTRUCTIONS	
1.	Please use the memorandum or sample solutions to guide your marking.
2.	Use the marks allocated as a guide to mark.
3.	Reasonable, in depth and innovative correct solutions provided by the students should be allocated marks even if not provided in the memorandum.
4.	Take note of the marks allocated to each question.

THIS MEMORANDUM CONSISTS OF 11 PAGES(Excluding this front page)

Section A: Multiple choice
Choose one correct answer

[20 Marks]

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 - c) <table><tr><td></tr></td></table>
 - d) **<table><tr><td></td></tr></table>**
 - e) <table><td><tr></tr></td></table>
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- c) ``
- d) ``**
- e) ``

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- a) In the body section
 - b) In the head section
 - c) In the script section
 - d) A) and B)**
 - e) A and C)

Section B: Discussion

[50 Marks]

1. Define the following terms in relation to web development:

[10 Marks]

a) User Experience Design

(2 Marks)

User experience (UX) design is the process design teams use to create products that provide meaningful and relevant experiences to users.

b) Wireframe

(2 Marks)

A sketch of blueprint of a web page. Shows the structure of the basic page elements, including: Logo, Navigation, Content, Footer

c) Domain Name System

(2 Marks)

The domain name system (DNS) is a naming database in which internet domain names are located and translated into internet protocol (IP) addresses.

d) Digital signature

(2 Marks)

Is a mathematically secure way of validating that a particular digital document was created by the person claiming to create it (authenticity), was not modified in transit (integrity), and cannot be denied (nonrepudiation).

e) Template Management

(2 Marks)

Refers to the systems that manage the structure of a website, independently of the content of each particular page.

2. Good website design contributes to the usability of a website. The following questions relate to web design principles and guidelines: [19 Marks]

a) What factor influence user experience (7 Marks)

- Useful
- Usable
- Findable
- Credible
- Desirable
- Accessible
- Valuable

b) Name and explain four visual design principles. (8 Marks)

Repetition

Repeat visual elements throughout design
Same color, font, background, navigation
Consistent design

Contrast

Add visual excitement and draw attention
Different elements should look different

Proximity

Group related items
move related objects close to each other

Alignment

Align elements to create visual unity
Everything should have a connection with some other items

c) Differentiate between a fixed and fluid page layout design. (4 Marks)

Fixed Layout

- AKA rigid or “ice” design
- Fixed-width often at left margin
- More appealing if fixed with content is centered

Fluid Layout

- AKA “liquid” design Expands to fill the browser at all resolutions.
- Adaptation: Page content typically centered and often configured with a percentage width such as 80%

3. The following questions are in relation to information security: [11 Marks]

a) Mention any five security vulnerabilities? (5 Marks)

- Injection
- Broken authentication and session management
- Cross-site scripting
- Insecure direct object references
- Security misconfiguration

b) With reference to the information security triad/triangle, explain what impact a security breach might have on your system? (6 Marks)

- **A loss of availability** - prevents users from accessing some or all of the systems.
- **A loss of confidentiality** - includes the disclosure of confidential information to a (often malicious) third party
- **A loss of integrity** - changes your data or prevents you from having correct data. This might manifest as an attacker hijacking a user session, perhaps placing fake orders or changing a user's home address.

4. The following questions are in relation to CSS(Cascading Style Sheets): 10 Marks]

a) What are the three types CSS styling and how they differ? (6 Marks)

Inline Styles

Configured in the body of the web page
Use the style attribute of an HTML tag
Apply only to the specific element

Embedded Styles

Configured in the head section of a web page.
Use the HTML <style> element
Apply to the entire web page document

External Styles

Configured in a separate text file with .css file extension
The HTML <link> element in the head section of a web page associates it with the .css file
Can be applied to multiple web pages or the entire site.

b) Give any four benefits of using CSS.

(4 Marks)

- **Improved control over formatting.**
- **Improved site maintainability.**
- **Improved accessibility.**
- **Improved page-download speed.**
- **Improved output flexibility (responsive design)**

Section C: HTML, CSS and JavaScript

[30 Marks]

1. Write the HTML code to create the HTML Table below

[18 Marks]

Student Information

Student Number	Student Name	Program	Year
202015972	Johannes P	Computer Science	First Year
200547852	Marcus H	Communications	Second Year
201326599	Shikongo I	Mathematics	Third Year
End			

```
<!DOCTYPE html>
<html>
<head>
<title>Table</title>
</head>
<body>

<table border = "1">          (1)
<caption>Student Information</caption> (1)
<tr style="background-color:gray"> (1)
  <th>Student Number</th>      (0.5)
  <th>Student Name</th>        (0.5)
  <th>Program</th>             (0.5)
  <th>Year</th>                (0.5)
</tr>                          (0.5)
<tr>                            (0.5)
  <td>202015972</td>          (0.5)
  <td>Johannes P</td>         (0.5)
  <td>Computer Science</td>   (0.5)
  <td>First Year</td>         (0.5)
</tr>                          (0.5)
<tr>                            (0.5)
  <td>200547852</td>          (0.5)
  <td>Marcus H</td>          (0.5)
```

```

    <td>Communications</td>      (0.5)
    <td>Second Year</td>      (0.5)
</tr>      (0.5)
<tr>      (0.5)
    <td>201326599</td>      (0.5)
    <td>Shikongo I</td>      (0.5)
    <td>Mathematics</td>      (0.5)
    <td>Third Year</td>      (0.5)
</tr>      (0.5)
    <tr>      (0.5)
        <td colspan = "4">End</td>      (2)
</tr>      (0.5)

</table>      (0.5)

</body>
</html>

```

2. Use JavaScript to achieve the following: [12 Marks]

a. Declare a variable x. (2 Marks)

```
var x;
```

b. Declare a function that calculate the sum of two numbers. (4 Marks)

```
function myFunction(a,b){
    return = a+b;
}
OR
var x = a+b;
```

c. Use an if statement to check if the value of x is greater than 100 and alert the user that "The value of x is too high". (4 Marks)

```
if (x > 100){
    alert("The value of x is too high");
}
```

d. Call/invoke a function. (2 Marks)

```
myFunction()
```

End of Paper