

The Open University of Sri Lanka
Faculty of Engineering Technology
Department of Electrical and Computer Engineering



Study Programme	: Bachelor of Software Engineering Honours
Name of the Examination	: Final Examination
Course Code and Title	: EEI3346 Web Application Development
Academic Year	: 2021/22
Date	: 09th February 2022
Time	: 0930 -1230hrs
Duration	: 3 hours

General Instructions

1. Read all instructions carefully before answering the questions.
 2. This question paper contains **Part A** and **Part B**.
 3. Answer **all** questions
 4. This is a Closed Book Test (**CBT**).
 5. Answers should be in clear handwriting.
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Part A

Use the sheet provided for answering.

1. In web development, planning stage determines the _____
 - a) development cost and URL
 - b) domain name and IP address
 - c) development cost and resources required
 - d) hypertext and hypermedia

2. If the image is not displayed in the browser due to some error, the _____ specifies an alternate text for image?
 - a) text attribute
 - b) caption attribute
 - c) value attribute
 - d) alt attribute

3. The correct place to refer an external style sheet in an HTML document is:
 - a) `<stylesheet>mystyle.css</stylesheet />`
 - b) `<style src = "mystyle.css" />`
 - c) `<link rel = "stylesheet" type = "text/css" href = "mystyle.css">`
 - d) None of the above

4. Integer or numeric variable in JavaScript can be defined as:
 - a) `int var marks;`
 - b) `var marks = 100;`
 - c) `marks interger;`
 - d) `var marks = "100 int";`

5. How to insert a multiline comment in JavaScript?
 - a) `//This comment has more than one line//`
 - b) `<!--This comment has more than one line-->`
 - c) `/*This comment has more than one line*/`
 - d) None of the above

6. Why is Vue.js called a progressive framework?
 - a) Vue.js is called a progressive framework because it is being changed and developed continually.
 - b) Vue.js is called a progressive framework because it facilitates us to create dynamic user interfaces and single-page applications.
 - c) Vue.js is called a progressive framework because it follows the latest JavaScript standards.
 - d) All of the above.

7. Which of the following statement is correct for components and props in Vue.js?
- a) Props are used to pass down data to the child components.
 - b) Props are custom attributes that you can register on a component.
 - c) When a value is passed to a prop attribute, it becomes a property on that component instance.
 - d) All of the above.
8. Which of the following syntax is correct for creating a Vue.js instance?
- a) `var text = new instance ({ //options }`
 - b) `var text = new object ({ //options }`
 - c) `var text = new class ({ //options }`
 - d) `var text = new Vue({ // options }`
9. What will be the output of the following code snippet?
- ```
<script type="text/javascript">
a = 5 + "9";
document.write(a);
</script>
```
- a) Compilation error
  - b) 14
  - c) Runtime error
  - d) 59
10. What will be the output of the following JavaScript code snippet?
- ```
int a=4;  
int b=1;  
int c=0;  
// JavaScript if statement and equalto operator  
If(a==b)  
    document.write(a);  
else if(a==c)  
    document.write(a);  
else  
    document.write(c);
```
- a) 0
 - b) 1
 - c) 4
 - d) Error
11. Which of the following is an example of the cloud?
- a) Amazon Web Services (AWS)
 - b) Dropbox
 - c) Cisco WebEx
 - d) All of the above

12. _____ is time based SQL injection attack.
- a) Quick detection
 - b) Initial Exploitation
 - c) Blind SQL Injection
 - d) Inline Comments
13. Which program is used by web clients to view the web pages?
- a) Web browser
 - b) Protocol
 - c) Search engine
 - d) Web server
14. What is "firewall" in a computer network?
- a) Web browsing software
 - b) Operating system
 - c) Physical boundary of network
 - d) System software to prevent unauthorized access
15. Which transmission media has the highest transmission speed in a network?
- a) Coaxial cable
 - b) Twisted pair cable
 - c) Optical cable
 - d) Electrical cable
16. Which of the following category of CSS is defined in the <head> section of an HTML page within a <style> element?
- a) External CSS
 - b) Inline CSS
 - c) Internal CSS
 - d) Both Internal and External CSS
17. In schema data type can be specified using
- a) Type
 - b) Data Type
 - c) Dt:type
 - d) Data:type

18. What is the correct syntax of writing JSON name/value pair, where the value is of string type?

- a) "name" : "value"
- b) "name" : value
- c) "name" : 'value'
- d) 'name' : 'value'

19. Find the oddly matched HTTP status codes.

- a) 200 OK
- b) 400 Bad Request
- c) 301 Moved permanently
- d) 304 Not Found

20. Which of the following is present in both an HTTP request line and a status line?

- a) HTTP version number
- b) URL
- c) Method
- d) None of the mentioned

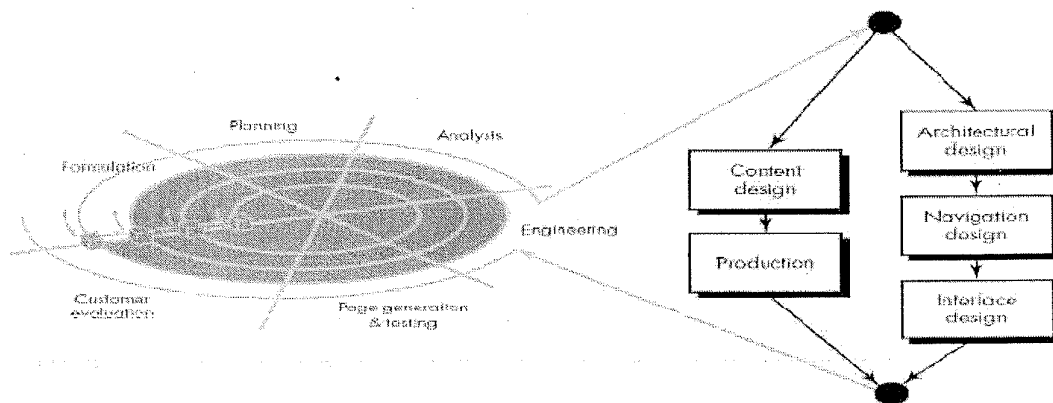
(Marks 40)

Part B

Answer all questions

Question 01

1. The internet helps us with facts and figures, information and knowledge for personal, social and economic development.
 - a) Differentiate the terms Internet and Web. (Marks 4)
 - b) An effective process model based on Software Engineering principles can help to follow a systematic approach especially for a website populated by framework activities.

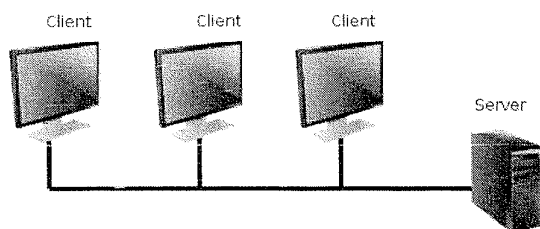


Elaborate, how this Web Engineering Process Model aids web developers to produce an effective webpage?

(Marks 8)

- c) Understanding Client Server architecture is the most important thing in the basic of WWW. Clearly explain how the client server architecture works.

(Marks 8)



Question 02

1. You have been asked to design an online form for a college admission as illustrated below.

Responsive Table	
First Name:	<input type="text" value="First Name"/>
Last Name:	<input type="text" value="Last Name"/>
Age:	<input type="text" value="Age"/>
College:	<input type="text" value="College"/>
Course:	<input type="text" value="Course"/>
Branch:	<input type="text" value="Branch"/>
Email Id:	<input type="text" value="Email Id"/>

- a) Write an HTML snippet to create the given table with the information shown above. (06 Marks)
- b) Write the CSS code to insert a picture at the left upper corner with the following details. (Marks 6)
- I. Name of the image is image01.jpg
 - II. Width is 50px and height is 50px.
 - III. Opacity 50%
- c) Write the XML snippet to display the contents of the above table. (Marks 4)
- d) Write the JSON snippet to display the contents of the above table. (Marks 4)

Question 03

1. Web development is evolving at very fast. New website technologies are being discovered regularly as developers explore new ways of innovation
- a) List and briefly explain at least three latest web development tools used each in **front-end** and **back-end** web development.

(Marks 3)

- b) Describe four (4) potential website attacks and the suitable solutions you may take to get rid of it. (Marks 2)
2. Cloud computing is a way of providing shared computing resources. List five (5) key features of cloud computing. (Marks 2.5)
3. Poorly optimized website performance is overwhelmed with a number of issues. As a web developer, define five (5) important points you should follow to increase performances of your website. (Marks 2.5)
4. Frameworks have become an essential part of web development, as the standards of web applications are always rising, so does the complexity of the technology needed. Briefly explain about Vue.js and the different methods we use to create webpages. (Marks 2.5)
5. Networking technology has evolved significantly over the years as demands on Ethernet and Wi-Fi have tremendously increased.
- a. Explain the three (3) main types of communication in networking. (Marks 1.5)
 - b. Explain difference between physical and logical addresses. (Marks 1.5)
6. List the seven layers of the OSI model. (Marks 3.5)