THE OPEN UNIVERSITY OF SRI LANKA

DEPARTMENT OF COMPUTER SCIENCE

B.Sc. DEGREE PROGRAMME 2023/2024

FINAL EXAMINATION CSU5302: WEB TECHNOLOGIES

DURATION: **TWO HOURS ONLY (2 HOURS)**

18th October 2023	**Time: 1.30 p.m. to 3.30 p.m.**

Answer **FOUR** Questions **ONLY**.

All questions carry equal marks.

Q1). Web design, web development and use of scripting languages are closely related for creating websites.

    i. List five (5) important factors to be considered on design of a website.

    ii. Compare and contrast Front End Development and Back End Development in relation to web development.

    iii. Explore the role of client-side programming in web design.

    iv. Evaluate four (4) aspects to be considered in web development.

    v. Analyse the use of JavaScript for client-side programming to create webpages.

Q2). A small online retailer named "TechTrend" is planning to establish an e-commerce platform to sell electronic gadgets and accessories. Given the initial size and budget constraints, they decided to implement a 2-tier architecture for their e-commerce website.

    i. Compare and contrast 2-tier architecture and 3-tier architecture by considering the development costs.

    ii. What are the developing tools (markup languages and scripting languages) could be used for the front-end development to create static and dynamic web pages for this e-commerce website?

    iii. The e-commerce platform is deployed on a shared hosting environment by the development team. Explain briefly, why they selected shared hosting environment?

    iv. While the 2-tier architecture meets the initial needs of the small online retailer, it may need to be revisited and expanded as the business grows. Explain the required transition to be done for their e-commerce website to address this issue.

    v. Compare and contrast two email protocols would use to communicate with customers of "TechTrend".

Q3). Most client-side scripting languages define the layout of web pages. PHP is a server-side scripting language and a powerful tool for making dynamic and interactive Web pages.

    i.   Name and describe three (03) ways to apply CSS with HTML documents in web designing.

    ii.   One CSS file can be used to control the layout of many HTML documents. Briefly explain this statement with a suitable example.

    iii.   What are the "correct align statements" you must use to fill in the blanks in the codes below to set text in table headings <th> aligned to the right while the table data <td> aligned to Centre. In addition, normal text paragraphs are aligned as justified.

```
th {
            ............... :.....................;   }

td {

            text-align: ....................;    }

p {

            ............... : .....................;    }
```

    iv.   The "do while" loop is one of the loop types that is available in PHP language. Name two (2) more loop types available in the PHP language.

    v.   Before accessing data in a database, a connection must be opened to the MySQL server. In PHP, this is accomplished with the mysqli_connect() function.

        Fill the four (4) blanks in the following function which requires four parameters.

        mysqli_connect(.......w........,........x.....,......y........., ...z........).

Q4). The web server acts as a client when making requests to the web service, and the web service processes these requests and sends back responses.

    i.   List five (5) features of a web service.

    ii.   Describe the importance of web services with suitable examples.

    iii.   Analyse the functions of web development Tools in relation to a web developer.

    iv.   List three (3) popular web development tools and describe one of them briefly.

    v.   Analyse three (3) core functionalities of WAMP server.

Q5). Web security and web hosting are crucial aspects of web design and development to ensure that your website or web application is both accessible to users and protected from potential threats and vulnerabilities.

    i.   Describe briefly the importance of web security.

    ii.   Compare and contrast known and unknown security vulnerabilities.

    iii.   List three (3) commonly known security vulnerabilities that would occur on any website.

    iv.   Name three (3) major resources required for hosting a website.

    v.   What is DNS? Analyse the role of DNS in web hosting.

Q6). CSS (Cascading Style Sheets) and HTML5 (Hypertext Markup Language 5) play crucial roles in mobile web design and development by enabling the creation of mobile-friendly, responsive, and visually appealing web experiences.

    i.   Compare and contrast desktop and mobile platforms.

    ii.   Explain the three (3) roles of CSS in mobile web design and development.

    iii.   Name five (05) features available in HTML5 to use in mobile web development.

    iv.   Name three (03) media elements available in HTML5 and briefly explain their advantages for media playback.

    v.   Name three (3) structural elements in HTML5 and analyse the role of structural elements in formatting of HTML documents.

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