Development of web user interface

1. Simply describe the role of html, css and java script in modern web development?
   → These 3 programming languages are used to create and design web sites and they make it look nice and interactive.
2. Analyze how these three interact during page rendering in a browser.
   → html: this is used to display what we see on a website
   Eg: paragraphs and headers
   → css: this is used to make that same website look nice
   Eg: css can help add some borders, colors, background colors and so on
   → java script: this is to help the website be interactive.
   Eg: when you click log in you go to log in page

Section 2.

Why is semantic structure crucial for accessibility and SEO? Give at least two examples of semantic tags and their correct usage.
→ Semantic structure helps screen readers and search engines understand a page, improving accessibility and SEO. For example, `<header>` defines the top section with titles or navigation, and `<article>` marks self-contained content like a blog post.

Section 3.

10. Compare and contrast the three main methods of applying CSS (inline, internal, and external).
Which method is most maintainable for large-scale projects and why?

Inline:
This is when you want to add css to a certain paragraph in an html for example, and you add the css with in that line of html

Eg: <pstyle”color: white;>the css will appear to whatever that you are going to type here

Internal:

This is when you have an html page and you decide to add the css in that page but not the line specifically

Eg:

<!DOCTYPE html>
<html>
<head>
<title> here is the html page</title>
</head>
<body>
<stlye>
P{
Color: white;
</style>
<h1> here is the heading part</h1>
this is where you add the paragraph

External:

This is when you have an html page and you have another css page and you link them in the html using <link rel=”sstylesheets” href=”style.css> line of code in the html page.

11. Analyze how the CSS Box Model affects layout design.

a) Define each component (content, padding, border, margin).

b) Describe a scenario where misunderstanding the box model could distort a page’s layout.

→ the CSS Box Model affects layout by controlling the size and spacing of elements. It has four parts: content is the text or image inside, padding is the space between content and border, the border surrounds the padding, and margin is the space outside the border. If you misunderstand it, an element can become bigger or smaller than expected. This can cause overlaps or misalignment with other elements. Proper use of the box model ensures a neat and consistent layout.

12. Flexbox and Grid are modern layout tools.

a) Discuss the key differences between Flexbox and Grid.

b) Explain when each is more appropriate to use.

→ Flexbox is for one-dimensional layouts, arranging items in a row or column, while Grid handles two-dimensional layouts with rows and columns. Flexbox is best for small-scale layouts like menus, and Grid is better for complex, full-page designs. Both make spacing and alignment easier.

14. Examine the impact of CSS specificity on debugging and maintenance. Provide an example of conflicting CSS rules and explain which one the browser applies and why.

→ CSS specificity decides which style is used when there are conflicting rules. The more specific rule wins, which helps control design but can make debugging tricky. For example, if `p { color: blue; }` and `.text { color: red; }` both apply to `<p class="text">`, the text will be red because the class is more specific than the element.