Q1

A) What is HTML? Why do we use HTML?

→ HTML is a standard lang. used to create & design web pages. HTML works with CSS for styling & Javascript for Interactivity.

Reasons to use HTML:-

1. webpage structure can be defined by using HTML.

2. Cross Platform Compability:-
HTML works on all browsers & devices

3. Hyperlinking :- HTML allows linking to other web pages using <a> tag.

4. Media Integration :- It supports encoding images, videos and audios.

5. forms and Input Handing can be done.

Q b.

→

a) Navbar-
a responsive navbar, which adapts to diff. screen size

```
<nav class="navbar navbar-expand-lg">
  <a class="navbar-brand">Logo</a>
</nav>
```

b) Buttons

```
<button class="btn btn-primary">clickme</b
```

3. Cards

```
<div class="card" style="width:18rem">
<div class="card body">
    <h5 class="card-title">Card title</h5>
<|div>
<|div>
```

4. Forms

```
<form>
  <input type="text" class="form-control">
<|form>
```

5. Grid system

```
<div class="row">
 <div class="col-md-6">col1 <|div>
<div class="col-md-6">col2<|div>
<|div>
```

c)

→ * universal selector

```
*
{
 margin: 0;
 padding: 0;
}
```

Element selector

```
p
{
 color: blue;
}
```

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class selector

```
.highlight
  {
    background-color : yellow;
  }
```

ID selector

```
# title
  {
    color ; blue ;
  }
```

Q4 A) Compare traditional web application architecture and AJAX based web application archi.

Traditional web Arc.	AJAX web Archi.
Entire webpage reloads every request.	Only necessary data is updated without reloading entire page.
Uses Synchronous communⁿ	Uses Asynchronous commⁿ
Slower and less interactive due to page reloads.	faster & more interactive due to partial updating
Response time is higher	Response time is lower.
Uses traditional server side languages.	Uses Javascript, XML / JSON and XMLHttpRequest

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Q4b

→

```
function isPrime(num)
{
 if(num<2) return false;
   for(let i=2; i<=Math.sqrt(num) ;i++)
    {
      if(num % i ===0)  return false;
    }
 return true;
}

// Read user input
let number= parseInt(prompt("Enter a Number));
if(isprime(number))
    {
      console.log("Number is Prime");
    }
else
    {
    console.log("Number is not a Prime");
    }
```

Q4C form selectors in Jquery

→ 1. :input selector :- selects all input elements

```
$("input").css("border","2px solid blue");
```

2. :text selector :-
It selects all text input fields.

3. : password selector :-
select all the password input fields
```
$("input: password).css("background-color","gray");
```

4. :checkBox selector :
Selects all checkBox input fields
```
$("input: checkBox").prop("checked", true);
```

5. :submit selector
selects submit buttons
```
$("input. submit").css("background", "green");
```

6. :enabled
selects enabled fields
```
$("input: enabled").css("border","2px solid green
```

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Q2 a)

→ 1)

	checkboxes	Radio Buttons
Selection	multiple selections allowed.	only one selection allowed.
	when user must choose many options.	When user should choose only one option.
	small square boxes	small circular boxes.
	choosing hobbies	selecting gender

→ b)

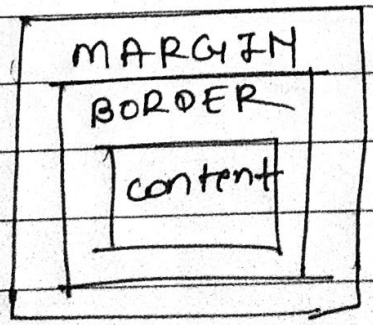
1) CSS box model is a fundamental concept of web design that describes how elements are structured and displayed on a screen.

2) Content :- Actual text, image or element inside the box.

3) Padding :- space inside the box, betn content and border

4) Border :- A line that wraps around the padding and content.

5) Margin :- Space outside the border, creating distance from other elements.



W3C is a world wide Consortium (W3C) is an international organization that develops & maintains web standards to ensure consistent & accessible across all web browsers & devices.

Advantages :-

It Ensures that website works consistently across all browsers & devices.

It promotes web accessibility for people with disabilities.

Helps in developing secure web technologies.

provides guidelines for modern web development.

Disadvantages :-

Some guidelines can be difficult to implement for beginners.

Now ~~Alpa~~ takes time to develop & implement

Q3 a)

→ Inline Javascript
Javascript code directly written inside the HTML elements.
It is quick to implement for small tasks.
useful for very simple interactions.

Drawbacks :-
Hard to maintain for larger project.
mixing HTML and CSS reduces readability.

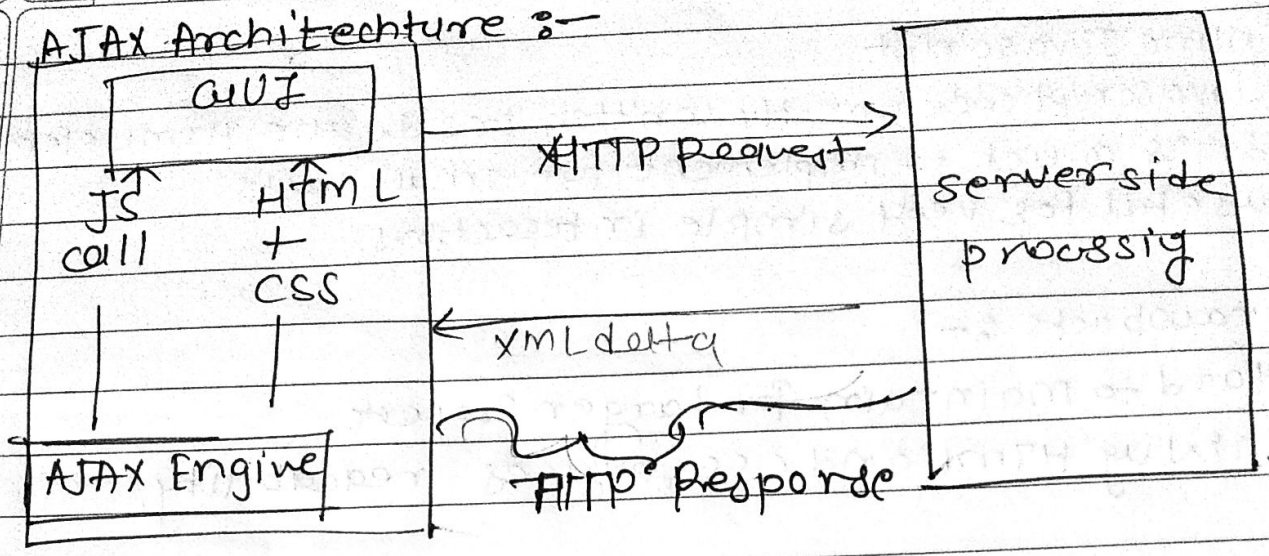
Embedded Javascript :-
code written inside the <script> tags within HTML file.
Advantages
keeps JS code separated
Good for pages with little javascript.

Drawbacks
Difficult to reuse code

External Javascript :-
JS code placed in a separate .js file and linked using
<script src="file.js">

Advantages :-
clean separation of HTML file
Easier maintenence & reusability.

3
b) AJAX Architechture :-



components of AJAX Architechture

1) GUI :- The user interacts with page through GUI

2) Javascript call :-
when an event occurs, javascript initiates an asynchronous request.

3) AJAX Engine :-
It acts as an immediatery betn client and server

4) server side processing :-
The server receives request, processes it and sends back the response to the client.

AJAX Engine processes the Response :-
AJAX Engine updates only the necessary parts of web page without reloading

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Q>

→ async & await are modern javascript features used to handle asynchronous operation.
It makes code more readable & easier to manage.

async :- Declares a function that always returns a promise

await :- passes the execution until promise gets resolved.

code :-

```
async function fetchdata()
{
 try
 { let response = awaitfetch(url);
   let data = await response.json();
   console.log (data);
 }
 catch (err)
 {console.log (Err);
}
 fetchdata ();
}
```

Advantages of asyn & await
Improves code readability
Handles error more clearly.
Eliminates callback hells.