1.How internet works?

The internet is a global network of interconnected computers that communicate via standardized protocols. Data is transmitted in packets across networks using TCP/IP (Transmission Control Protocol/Internet Protocol). Devices like routers and servers manage traffic and ensure data reaches its destination.

2. How browser works?

A browser retrieves, interprets, and displays web pages. It communicates with web servers via HTTP/HTTPS, requests HTML/CSS/JavaScript files, renders them using a rendering engine, and displays the content. It also manages user interactions like clicking links and submitting forms.

3. What is Server?

A server is a computer or software that provides resources, data, services, or functionality to other computers, known as clients, over a network. Servers respond to requests from clients, such as fetching web pages, sending emails, or storing files.

4. what are the types of server available?

Types of servers include:

- Web server (e.g., Apache, Nginx)
- Email server (e.g., Postfix, Exchange)
- File server (e.g., Samba, FTP servers)
- Database server (e.g., MySQL, PostgreSQL)
- Application server (e.g., Tomcat, Node.js)

5. What is SEO? Importance of SEO?

SEO (Search Engine Optimization) is the practice of optimizing web pages to rank higher in search engine results pages (SERPs). It's important because higher rankings lead to increased visibility, traffic, and potentially more business opportunities for websites.

6. What is Accessibility?

Accessibility refers to designing websites and applications so that people with disabilities can use them effectively. This includes visual, auditory, physical, speech, cognitive, and neurological disabilities.

7. What is Markup Language?

A markup language is a system for annotating text or data to add formatting, structure, or metadata. HTML (HyperText Markup Language) is a widely used example.

8. What is HTML?

HTML (HyperText Markup Language) is the standard markup language used to create and structure web pages and web applications. It defines the content and layout of a web page using elements and attributes.

9. What is browser engine?

A browser engine (or layout engine) is software that renders content of web pages. It parses HTML, XML documents, applies CSS styles, and executes JavaScript to display web pages. Examples include Blink (used in Chrome and Edge), Gecko (used in Firefox), and WebKit (used in Safari).

10. What is rendering engine? share the available rendering engine?

A rendering engine is a component of a web browser responsible for displaying content. Examples include:

- Blink (Chrome, Edge)
- Gecko (Firefox)
- WebKit (Safari)

11. What is JavaScript Engine? share the available JS engine? Purpose of JS Engine?

A JavaScript engine executes JavaScript code in a web browser. Examples include:

- V8 (Chrome, Edge)
- SpiderMonkey (Firefox)
- JavaScriptCore (Safari) The purpose is to interpret and execute JavaScript code to enable interactive web pages and web applications.

12. How website works?

Websites work by serving web pages to users via a web server. The browser retrieves HTML, CSS, JavaScript files from the server, renders them, and displays the content. User interactions trigger requests to the server, which responds with updated content or data.

13. What is Data Structure?

A data structure is a way of organizing and storing data so that it can be accessed and manipulated efficiently. Examples include arrays, linked lists, stacks, queues, trees, and graphs.

14. Explain Tree Data Structure?

A tree data structure consists of nodes connected by edges, with a hierarchical relationship between them. It has a root node, parent nodes, and child nodes. Trees are used in many applications, such as representing hierarchical data (like file systems) and organizing data for efficient searching and sorting.

15. What is user agent? share the list and its purpose?

A user agent is software (usually a web browser) that acts on behalf of a user when interacting with web servers. It sends information about itself (user agent string) to servers, which helps servers deliver content tailored to the capabilities and preferences of the user's device. Examples include:

- Chrome, Firefox, Safari (web browsers)
- Googlebot, Bingbot (web crawlers)

16. What is Hypertest?

Hypertext is text displayed on a computer or other electronic device that contains links to other texts or multimedia content. Clicking on hyperlinks allows users to navigate between related documents or web pages.

17. What is HTML Tags?

HTML tags are keywords surrounded by angle brackets (< >) that define the structure and appearance of content in a web page. They are used to create elements, such as headings (<h1>), paragraphs (<p>), links (<a>), images (<img>), and more.

18. What is HTML Attributes?

HTML attributes provide additional information about HTML elements. They are defined within the start tag of an element and modify the element's behavior or appearance. Examples include id, class, src, href, etc.

19. What is HTML Elements?

HTML elements are the building blocks of HTML pages. An element consists of a start tag, content, and an end tag (if applicable). Examples include headings, paragraphs, lists, images, forms, etc.

20. How do convert elements to tree?

In web development, the HTML parsing process converts HTML elements into a tree structure called the Document Object Model (DOM). This DOM tree represents the hierarchical structure of HTML elements, which browsers use to render web pages.

21. What is DOCTYPE?

DOCTYPE (Document Type Declaration) is an instruction to web browsers and validators about the version of HTML or XHTML used in a web document. It helps browsers render content correctly by specifying the document type definition (DTD).

22. What are the ways we can save html file?

HTML files can be saved in various ways:

- Using a text editor (e.g., Notepad, Sublime Text)
- Saving from a web browser (e.g., Chrome, Firefox)
- Using integrated development environments (IDEs) like Visual Studio Code
- Generating HTML files dynamically using server-side languages like PHP or Python

23. What is charset? why we need to use this?

Charset (character encoding) specifies how characters are represented as bytes in computer memory. It ensures that text displays correctly across different devices and platforms. Common charsets include UTF-8, ISO-8859-1, and ASCII.

24. What is meta data? what is the purpose of it?

Metadata provides information about other data. In the context of web pages, metadata describes the content, structure, and attributes of the page. Examples include page title, author, keywords, and viewport settings. Metadata helps search engines index pages accurately and improves accessibility.

25. Explain Web Application Architecture?

Web application architecture refers to the structure and design of web applications. It typically includes:

- Client-side (frontend): User interface and presentation layer (HTML, CSS, JavaScript)
- Server-side (backend): Application logic, server, database (e.g., using frameworks like Django, Node.js, Ruby on Rails)

- Communication: APIs (RESTful APIs), data formats (JSON, XML), and protocols (HTTP, WebSocket)
- Scalability, security, and performance considerations
- Often follows patterns like MVC (Model-View-Controller) or MVVM (Model-View-ViewModel)