**1.** **When a user enters an URL in the browser, how does the browser fetch the desired result? Explain this with the below in mind and Demonstrate this by drawing a diagram for the same.**

**Answer.** The full form of the URL is Uniform Resource Locator. URL is the website's address, which you can find in the address bar of your web browser. It looks for the IP address which is connected with the URL, and when we type the URL it fetches, and that is how the browser fetches the result.

**a.What is the main functionality of the browser?**

**Answer.** The main task is to collect information from the Internet and make it accessible to users.

**b. High-Level Components of a browser?**

**Answer.**  The 7 types are-

1. User Interface - This is the forefront of the browser which a user sees. It contains the address bar holding the resource URL and various controls like home, back, forward and refresh actions.
2. Browser Engine - This component acts as a bridge between the use interface and the rendering engine. It manages and manipulates the rendering engine based on the inputs from all user interfaces.
3. Rendering Engine - The rendering engine, as the name suggests is responsible for rendering the requested web page on the browser screen. The rendering engine interprets the HTML, XML documents and images that are formatted using CSS and various parsers. Then it generates the layout that is displayed in the User Interface.
4. Network - This component retrieves URLs based on common web protocols like HTTP, HTTPS and FTP. It also manages communication and security. It sometimes creates a cache of documents to reduce network traffic laod.
5. JavaScript Engine - It interprets and executes all JavaScript code embedded in a webpage. While the scripts execute, all parsers are kept on hold until completion.
6. UI Backend - This component exposes a generic interface, that is not platform-specific, to draw simple widgets like input boxes other input controls. Underneath it leverages the OS's user interface methods.
7. Data persistence/Storage - This component supports browser storage mechanisms like Local Storage, IndexedDB, WebSQL and File System. It is a small database created on the local drive where the browser is installed and manages things like cache, cookies, bookmarks and preferences.

**c.Rendering engine and its use.**

**Answer.** This is responsible for rendering a specific web page requested by the user on their screen. It interprets HTML and XML documents along with images that are styled or formatted using CSS, and a final layout is generated, which is displayed on the user interface.

**d.Parsers (HTML, CSS, etc).**

**Answer.** Parsing means analyzing and converting a program into an internal format that a runtime environment can actually run.

**e.Script Processors.**

**Answer.**The script processor parses each incoming document’s JSON source fields into a set of maps, lists, and primitives.

**f.Tree construction**

**Answer.**The input to the tree construction stage is a sequence of tokens from the tokenization stage. The tree construction stage is associated with a DOM Document object when a parser is created. The "output" of this stage consists of dynamically modifying or extending that document's DOM tree.

**g.Order of script processing**

**Answer.**

**h.Layout and Painting.**

**Answer.**