1. Web Page Design Principles ?

1. Visual Hierarchy

Squeaky wheels get the grease, and prominent visuals get the attention. Visual hierarchy is one of the most important principles behind good web design. It's the order in which the human eye perceives what it sees.

2. Divine Proportions

The lower-case Greek letter phi is used for the Golden Ratio.

The Golden Ratio is the magical number 1.618 (φ). Designs that use proportions defined by the golden ratio are, it's believed, aesthetically pleasing.

3. Hick's Law

Hick's Law says that with every additional choice increases the time required to take a decision.

You've experienced this countless times at restaurants. Menus with huge options make it difficult to choose your dinner. If it offered two options, making a decision would take much less time. This is similar to the Paradox of Choice—the more choices you give, the easier it is to choose nothing. Both principles come into play with web design.

4. Fitt's Law

Fitt's law stipulates that the time required to move to a target area (e.g. click a button) is a function of the distance to the target and the size of the target. In other words, the bigger an object and the closer it is, the easier it is to use.

5. Rule of Thirds

It's a good idea to use images in your design. A visual communicates your ideas much faster than text.

The best images follow the rule of thirds: An image should be divided into nine equal parts by two equally spaced horizontal lines and two equally spaced vertical lines. Important compositional elements should be placed along these lines or at their intersections.

6. Gestalt Design Laws

Gestalt psychology is a theory of the mind and brain. Its principle is that the human eye sees objects in their entirety before perceiving their individual parts.

There are eight so-called gestalt design laws that allow us to predict how people will perceive something.
Here's how each relates to web design:
1. Law of proximity
2. Law of similarity
3. Law of closure
4. Law of Symmetry
5. Law of common Fate
6. Law of Continuity
7. White space and clean design
White space (also called "negative space") is the portion of a web page that remains "empty." It's the space between graphics, margins, gutters, space between columns, space between lines of type, or visuals.
8. Occam's Razor
When given several competing hypothesis, Occam's razor urges you to choose the one that makes the fewest assumptions and, thereby, offers the simplest explanation. To put it in the context of web design, Occam's Razor argues that the simplest solution is usually best.

2. How to load web page faster ?

1. **Implement your own content delivery network (CDN). A collection of global servers share a website's static files, such as CSS or JavaScript, and they deliver from the server closest to the user's physical location. In other words, when a user clicks on a video, the file loads faster because it is distributed from a server nearby. Larger websites implement CDNs to ensure visitors around the world have a much more accessible, fast experience.**
2. **Use adaptive images. According to the HTTP Archive, 61 percent of a website's page weight on a desktop computer is images. Start by using tools such as Picturefill or Adaptive Images on your website to save bandwidth and improve page speed for your site. Another option is to adopt new image formats like WebP and JPeg XR—this can help reduce image**

weight by twenty to fifty percent without sacrificing image quality.

3. **Cache, cache, cache. Browser caching stores cache versions of static resources, a process that quickens page speed tremendously and reduces server lag. When a user visits a page on your website, the cached version usually displays unless it has changed since it was last cached. This means the browser saves a lot of requests to your server and improves load speed for your site.**
4. **Evaluate your plugins. Plugins can bring new functionality and features to your website, but the more plugins your website has, the longer it takes to load. Poor or outdated plugins can slow down website performance dramatically, which could be fixed by removing plugins that duplicate functionality, are out of date or are no longer used.**
5. **Combine images into CSS sprites. If you have several images on a page, you are forcing multiple roundtrips of the server to get all the resources secured, which slows down page speed. Sprites combine all background images on a page into one single image, which means all images appear when the main "sprite" loads. This reduces the chance of flickering images and a smoother experience for your users.**
6. **Enable HTTP keep-alive response headers. HTTP requests are simple: they grab a single file, distribute and close. That said, this process is not always fast. Keep-alive allows the web browser and server to agree to use the same connection to grab and send multiple files. In other words, the server holds the connection open while a user is on the site instead of opening a new connection with every request, easing the load for the processor, network and memory.**
7. **Compress your content. You can compress your content significantly in order to improve your website performance. Popular web servers such as Apache and IIS use the GZIP compression algorithm to do this automatically on HTML, CSS and JavaScript. There are even compressor services online that remove unnecessary spaces and characters across your HTML and CSS code.**

8. **Configure expires headers. When a user visits your website, the website files are stored on their computer so that your website loads faster for them the next time they visit. There is an expiration date in the file header that determines how long these files will be stored on their computer, which is usually set to 24 hours by default. You can configure the expires header so that the files never time out, or you can increase the expiration date so that it doesn't impact your server and page load time.**
9. **Minify JavaScript and CSS. By removing unnecessary line breaks, extra space, and so on, you will speed up parsing, downloading and executing. This simple task can cut bytes of data from your page, and every little bit counts. Tools like this CSS Minifier/Compressor can be very helpful in this department.**
10. **Move Your Website to Our New Managed WordPress solution. If you've taken these previous steps and your website is still loading slowly, you may want to consider a new hosting package. Lucky for you, we've got just the solution.**

3. Search engines: what, how it works, types, well-known search engines ?

1. **A search engine is a software system that is designed to carry out web searches. They search the World Wide Web in a systematic way for particular information specified in a textual web search query. The search results are generally presented in a line of results, often referred to as search engine results pages (SERPs) The information may be a mix of links to web pages, images, videos, infographics, articles, research papers, and other types of files. Some search engines also mine data available in databases or open directories.**
2. **Search engines work through three primary functions:**
   1. Crawling: Scour the Internet for content, looking over the code/content for each URL they find.

2.Indexing: Store and organize the content found during the crawling process. Once a page is in the index, it's in the running to be displayed as a result to relevant queries.
3.Ranking: Provide the pieces of content that will best answer a searcher's query, which means that results are ordered by most relevant to least relevant.

3. Search engines are classified into the following three categories based on how it works.
1.Crawler based search engines
2.Human powered directories
3.Hybrid search engines
4.Other special search engines
Well know search engines :
1.Google
2.Bing
3.Baidu
4.Yahoo!
5.Yandex
6.Ask.com
7.DuckDuckGo

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