

Name : M. Iftaza Malik
Roll: P19-0033
Section: SA (cs)

Q1.) a) what are Cookies?

Ans:- During web browsing small blocks of data are created by a web server, these blocks or information is saved on user's browser, more than one cookie may be placed on a user's device during a session.

b) Discuss their importance in terms of computer Networks.

Ans: They enable web servers to store stateful information on the user's device or to track the user's browsing activity, they play an essential role when a user is browsing like storing user name and password for that website or shopping cart and ordering.

c) What are the advantages and disadvantages of using them.

Ans: Advantages:

Cookies basically save information regarding different websites which helps user in smooth web surfing. They do not require any server resources, they are stored on the user's computer so no extra burden on the server.

Users can also configure cookies to expire when the browser session ends. In case server crashes, the cookies are still available and remembers critical information which is a big advantage.

Disadvantages:

There is a security issue with cookies, user can not store sensitive information in cookies as they are easily opened.

Cookies can not store complex information as they are limited to simple string information, there are also many

Limitations on its size. The main issue with cookies is privacy.

Q2.) a) What is a Web Cache?

b) Why are they used?

c) How it works?

d) Discuss advantages and disadvantages.

a) Ans: Every time a user loads a webpage, their browser has to download quite a lot of data in order to display that webpage. To shorten page load times, browser stores content on device's hard drive. This stored information is Cache.

b) Ans: Web Caching is basically a process of storing data for reuse. e.g. a copy of web pages served by a web server. This information or data is stored first time when user visits this website and when user visits it later this cache serve the copy which helps origin server from getting overloaded.

c) Ans.: Caching is a process of copying files in a temporary storage location, so that later they can be used. Web browsers often cache HTML files, JavaScript and images in order to load website more quickly.

d) Ans. Advantages:

The load time of a website can be a cause for user frustrations like pages that take too long to load can be accessed easily using cache. Content availability is a key component as it saves lot of time so, cache gives a huge advantage in this regard.

e) Proxy / Servers:-

Disadvantages:

If caching is not set up correctly, then the browser will not be able to access that cached page on website. It also may load an old or outdated page which can have a negative impact on the user experience.

a) Proxy Server:

In computer Networking a proxy server acts as a bridge between a user and server providing the resource. A proxy server works on behalf of client when requesting the service this way it hides the true origin of the request.

b) Why are they used?

Ans:- Proxy servers can be used for both legal and illegal purposes. In the enterprise a proxy server is used to facilitate administrative control, security or caching services among other purposes. In a personal computing context, proxy servers are used to enable user privacy and anonymous surfing.

c) How it works?

Ans:- As a proxy server has its own IP Address, it acts as a go-between for a computer and the internet. It is connected to

to the proxy which then gets the response from web server and sends the data from page to your browser.

d) Advantages:

Proxy has been used primarily for masking the IP addresses. This way your computer is safe from hackers. As the hackers will be able to access your real IP. Many websites owners restrict contents to certain areas, using masked IP Address these can be accessed.

Disadvantages:

The cache data, the proxies used can remember your personal information if someone outside from outside gathers them it will be a problem. Although proxies provide benefits of anonymity, it lacks of encryption. Most of proxies use SSL certificate for encrypting data and this is a big disadvantage. Proxy may not be compatible with your local network.

Q3:) What are VPNs?

Ans: VPN stands for virtual private network and is used to extend a private network across a public network. The benefits of using a VPN include increase in functionality, security and management of the private network. A VPN is created by establishing a virtual point-to-point connection through the use of dedicated circuits or with tunneling protocols over existing networks.

Virtual Private Networks (VPN) may be classified by several categories:

- i) Remote access
- ii) Site to site
- iii) Extranet - based site - to - site