

Q No. 1

A large company with more than 10,000 employees providing internet services to its different departments. The company network is a high-speed LAN. The router of company is connected to public internet using a well-known ISP connection. Suppose that majority of internet traffic is web access. The IT department of company want to improve the internet access.

- A) Keeping above scenario in mind, what are your solution for following;
- i) What solution would you provide to IT department; so that they can significantly reduce the response time for any web request by an employ, and also it can reduce traffic on company's access link to ISP, and even that solution can reduce overall Web traffic on internet.
 - ii) With the help of diagram explain your proposed solution you provided in A(i), how it would work and what entities it will add in the company's network.
- B) Consider your solution for large content provider networks like Netflix, Google, or very large webs like Wikipedia, how they can be benefited from the solution you proposed in A (i).

Q No. 2

- A) i) A very large eCommerce company what to enhance their web operation, they want to distribute the load among replicated servers, what application-layer protocol should you suggest which can provide this facility. Briefly explain how it works.
- ii) A company has an email server with the host name `reply1.upper-sindh.mehran.com.pk`, they want a small rememberable hostname, what solution do you suggest? With the help of technical details explain how it would work.
- B) i) A newspaper named AKHBAR want to launch its website, the owners want to get domain name www.akhbar.com.pk , how would the get registered for that domain name? what other requirements they need to fulfill (i.e. any other servers required other than web server)? What sort of database is used to register domain names? What would be that entry looks like in the database at registration authority end.
- ii) Consider Allah Dino from Goth Baqar Nizamani want to access a website named www.abcd.com, the web server of that web site is located in Log Angeles USA, how Allah Dino's host will get IP address of www.abcd.com briefly describe what severs are involved.