

- (i) What is Silly Window Syndrome? How do you avoid it? (8) (Nov/Dec 2007)
17. (i) Suppose that TCP congestion is set to 18KB and a timeout occurs. How big will the window be if the next four transmission bursts are all successful? Assume that the maximum segment size is 1KB(4)
- (ii) Consider the effect of using a slow start on a line with a 10 msec round trip time and no congestion. The receiver window is 24KB and the maximum segment size is 2 KB. How long does it take before the first full window can be sent? (6)
- (iii) Explain the improvement suggested by Karn in deciding the time out period in TCP. (6) (Nov/Dec 2009)
18. (i) If the TCP round-trip time, RTT, is currently 30 msec and the following acknowledgements come in after 26, 32 and 24 msec, respectively what is the new RTT estimate using the Jacobson's algorithm? Use $\alpha = 0.9$.
- (ii) A TCP machine is sending full windows of 65,535 bytes over a 1-Gbps channel that has a 10 msec one-way delay. What is the maximum throughput available? What is the line efficiency? (4)
- (iii) Explain the three way handshake protocol used by TCP to establish the connection (6) (Nov/Dec 2009)
19. Explain in detail about Internet Control Message Protocol (8) (A/M'11)

UNIT 5

APPLICATION LAYER

PART A

1. What is a Domain Name Service? (Nov Dec 2006, A/M'11)

Ans: The Domain Name System (DNS) is a hierarchical distributed naming system for computers, services, or any resource connected to the Internet or a private network. It associates various information with domain names assigned to each of the participating entities. Most prominently, it translates easily memorized domain names to the numerical IP addresses needed for the purpose of locating computer services and devices worldwide. By providing a worldwide, distributed keyword-based redirection service, the Domain Name System is an essential component of the functionality of the Internet.

2. Define WWW (A/M'11)

3. What is MIME? (Nov Dec 2007)

Ans: MIME stands for Multi-purpose Internet Mail Extensions. MIME types form a standard way of classifying file types on the Internet. Internet programs such as Web servers and browsers A MIME type has two parts: a type and a subtype.

4. Why is DNS necessary? State its significance. (May Jun 2007)

Ans: For unique client/server identification in the network, the DNS is necessary. It provides two addressing schemes: number-based Internet Protocol addresses and text-based Domain Name System (DNS) names. A domain name is a textual address for a location on the Internet.

5. What is Security Parameter Index? (May Jun 2007)

Ans: The Security Parameter Index (SPI) is an identification tag added to the header while using IPsec for tunneling the IP traffic. This tag helps the kernel discern between two traffic streams where different encryption rules and algorithms may be in use.

The SPI is an essential part of an IPsec Security Association (SA) because it enables the receiving system to select the SA under which a received packet will be processed.

6. What are the two main categories of DNS messages? (Nov Dec 2008)

Ans: DNS has two types of messages : Query and response.

Query: header and question records

Response: Header, question records, answer records, authoritative records, and additional records.

7. How is HTTP similar to SMTP? (Nov Dec 2008)

Ans: HTTP is like SMTP because the data transferred between the client and server are similar in appearance to SMTP messages. Also, the format of the messages is controlled by MIME-like headers

8. What is SMTP? (Dec-10)

Ans: The protocol that supports email on the Internet is called Simple Mail Transfer Protocol. SMTP is part of the TCP/IP protocol suite SMTP consists of two parts: A local part and a domain name separated by an @ sign Local Part @ Domain Name.

9. What is Telnet? (Dec-11)

Ans: Telnet is the standard TCP/IP protocol for virtual terminal service. It enables the establishment of a connection to a remote s/m in such a way that the local terminal appears to be a terminal at remote system.

10. State the purpose of SNMP. (Dec-11)

Ans: Simple Network Management Protocol (SNMP) is a standard internet protocol enabling certain nodes in a network (the management stations or managing nodes) to query other network components or applications for information about their status and activities. Such a query is known as an SNMP poll.

11. Define SNMP. (May-12)

12. Why email security is necessary? (Dec-11)

It is the process of using email encryption to send messages that can only be opened by the intended recipient. Secure email encryption protects both your online data and customers sensitive information.

13. What are the advantages of allowing persistent TCP connection in HTTP? (Dec-11)

- HTTP requests and responses can be pipelined on a connection
- Network congestion is reduced by reducing the no. of packets caused by TCP opens.
- Latency on subsequent requests is reduced

14. What do you mean by TELNET? (May-14)

15. What is Domain Name Service (Nov/Dec 2006)

16. State the application Layer protocol in the TCP/IP protocol suite that provides access to a networked file server (Nov/Dec 2006)

17. What is MIME? (Nov/Dec 2007)

18. What are the two main categories of DNS message? (Nov/Dec 2008)

19. How is HTTP similar to SMTP(Nov/Dec 2008)

20. What is the purpose of inverse domain (April/May 2010)

21. Why SMTP is need? (Nov/Dec'12)

PART B

1. Explain SMTP in detail. (8) (Dec-11, Nov/Dec 2009,A/M'10,Nov/Dec 2010, A/M'11)

2. Explain the SMTP. Give their uses, state strengths and weaknesses. (8)(Dec-10)

3. Explain in detail about message format and message transfer in electronic mail.(8)(May-11)