8. What are the general assumptions made for sliding window protocols?
9. Discuss in brief the following SWPs:
   (a) Go back n.
   (b) A protocol using selective repeat.
10. Explain the structure of HDLC and PPP.

Chapter 10

1. Compare and contrast static and dynamic channel allocation.
2. Compare and contrast pure ALOHA and slotted ALOHA. Show mathematically efficiency of both in relation to performance.
3. What are CSMA protocols? Write algorithms for persistent and non-persistent CSMA.
4. Explain CSMA with collision detection.
5. Discuss different categories of collision free protocols with examples.

Chapter 11

1. Write short note on IEEE standards.
2. Discuss frame format of IEEE 802.2.
3. Explain the following in context with 802.3:
   (a) Frame format.
   (b) Cabling.
   (c) MAC sub layer protocol.
   (d) Binary exponential alogarithm.
4. Compare main features of IEEE standard 802.4 and 802.5.
5. What is medium access control? How is it implemented in aken ring LAN?
6. How medium access is controlled in token bus?
7. Discuss the performance of token based protocols.
8. Discuss architecture of DQDB.
9. How does FDDI work? Also discuss its applications. How it is different from CDDI?

Chapter 12

1. Discuss design issues for the network layer. Also explain its internal organization.
2. Compare datagrams and virtual circuits.

3. What are routing algorithms? Discuss their significance and suitability.
4. Explain the various classes routing algorithms. What are the properties desirable in a routing algorithm?
5. Explain shortest path routing by taking suitable example.
6. What is adaptive routing? Discuss one such algorithm.
7. Briefly discuss various ways of broadcast routing.
8. Compare distance vector and link state routing algorithms.
9. What is congestion control? Differentiate between open loop and closed loop congestion.
10. Define congestion. What are various techniques for congestion control? Explain any two.
11. Discuss the main causes of congestion. What are the effects of congestion?
12. How congestion takes place in networks? Explain packet discarding algorithm for congestion control.
13. Differentiate between leaky bucket and token bucket algorithms.
14. Why IPv6 is appropriate for the next generation of the Internet protocol?
15. Explain different types of messages generated by ICMP.

Chapter 13

1. List various types of internetworking devices.
2. Explain the working of repeaters.
3. Define and compare hub and switch.
4. Discuss the functions, uses and the comparison of bridge, gateway, router and repeater.
5. What do you mean by a switch? What functions does it perform in networking?
6. Differentiate between transparent and source routing bridges.
7. Define router. Discuss how router based networking is carried out.
8. What is the difference between?
   (a) A router and a bridge.
   (b) A bridge and gateway.

Chapter 14

1. Discuss the comparison between transport layer and data link layer.
2. Discuss the services and elements of transport protocols.
3. Name a few transport layer protocols.
4. What is a port? Briefly discuss various types of ports.
5. Define socket with its types.
6. Discuss 3-way handshaking used in TCP protocol.
7. Discuss the usage of ports. List down few well-known ports.
8. Discuss UDP header format. Why sometimes application programmers choose UDP as a data transport service?
9. Compare applications of TCP and UDP.
10. For what applications SCTP and DCCP are used as the transprot protocols?

Chapter 15

1. How session is administered in session layer?
2. Discuss various design issues for session layer and presentation layer.
3. Discuss the working of Token management and synchronization of session layer.
4. Explain the purpose and working of RPC. Also list the main issues to be addressed by RPC.
5. What is data compression? Discuss one lossless compression technique with example.
6. Why is data compression important in networks? Discuss various techniques of compressing the data in networks.

Chapter 16

1. Define FTP. How connection is established to an anonymous FTP site?
2. Explain the working of various modes of FTP.
3. Explain how a browser retrieves web page from web server using HTTP.
4. Explain components of DNS. Also discuss various kinds of name servers.
5. Explain purpose of RTSP, SSL and SIP.
6. Define internet. What is role and responsibility of ISP? Discuss internet addressing.
7. List and briefly explain the applications of internet.

8. What is e-mail? Explain how e-mail transfers a message from a user's computer in India to a user's computer in Europe.
9. Write briefly about working of e-mail. Also explain its advantages over conventional mail system.
10. Discuss the role of user agent and message transfer agent in e-mail system.
11. Explain the various protocols used for sending and retrieving e-mails.
12. Explain the characteristics of TELNET.
13. What is remote login? How does it work.
14. Discuss various components of SNMP.
15. What is internet commerce? How is it going to affect business world?

Chapter 17

1. How can security be enforced in networks?
2. What are the main security threats to a network? Explain different sources of network threats.
3. What are the issues involved in answering the network security? Explain by taking examples.
4. What is cryptography? How does it provide network security?
5. What do you understand by data encryption? Give different methods used for it.
6. Why digital signatures are used?
7. Explain working of RSA algorithm with example.
8. Explain operation of DES.
9. What do you mean by network firewall? Also explain its purpose and types.

Chapter 18

1. Explain the role of X.25 protocol.
2. Explain need of X.400. Also discuss its various components.
3. Discuss characteristics of X.500.
4. Explain te purpose of FTAM and VTAM.