QUESTION BANK

Class: M.Sc III sem

Subject: Data Communication Network (DCN)

Unit I:

1. Explain the design issues of Data Link Layer.
2. Explain Elementary data link protocols.
3. Explain Digital Transmission in detail.
4. Explain congestion control algorithms in brief.
5. Explain OSI reference model with well labelled diagram.
6. Explain in detail the congestion control algorithm of Network Layer.
7. Write a short note on services provided by Physical Layer to Data Link Layer.
8. Explain with well labelled diagram the services provided by Data Link Layer.
9. What is ISDN? Explain the architecture of ISDN.
10. What is congestion control? Explain congestion control in virtual circuit subnets.
11. What is sliding window protocol? Explain in detail.
12. What are the functions of Physical Layer ?

UNIT II:

1. Explain any two data compression techniques in detail.
2. What are the elements of a transport protocol ? Explain in detail.
3. Write a note on 'Virtual Terminals'.
4. Explain working of Remote Procedure Calls.
5. Explain the different methods of data compression.
6. Describe the design issues of Transport Layer in detail.
7. Explain file access and management methods at Application Layer.
8. Describe the process of file transfer in Application Layer.
9. What are Virtual Terminals? Explain in detail.

UNIT III:

1. What is Cryptography? Explain different Cryptographic Techniques.
2. Write a note on 'IDEA algorithm'.
3. Explain conventional encryption DES.
4. What is cipher block chaining? Explain with a suitable example.
5. Explain in detail the threats to a Network.
6. Write notes of following :
   (i) Passive Attacks
   (ii) Active Attacks

7. Explain in detail the encryption devices and their location.
8. Explain Cipher block mode of operation in detail.
9. Explain in brief encryption devices and their location.
10. Explain the working of DES algorithm.
11. Explain the classification of security services in detail.
12. Explain symmetric key encryption with suitable example.

UNIT IV:

1. Write a note on Packet Filtering and Firewalls.
2. Explain Intrusion Detection techniques in detail.
3. Explain password-based authentication in detail.
4. Explain SHA algorithm in detail.
5. Describe in detail the Diffie-Hellman Key Exchange.
6. Write a short note on Intrusion Detection Techniques.
7. Write short notes on :
    a. Hash Function
    b. Message Digests
8. What is message digest ? Explain in brief.
9. Explain Email security in brief.
10. What is the difference between Packet Filter and Stateful Firewall ?
11. What is Packet Filtering ? Explain.
12. Explain RSA Public Key Encryption Algorithm.