



SIDDHARTH GROUP OF INSTITUTIONS :: PUTTUR
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QUESTION BANK (DESCRIPTIVE)

Subject with Code : Computer Networks(9F00302)

Course : MCA

Year & Sem: II-MCA & I-Sem

Regulation: R09

UNIT –I

Introduction to Computer Networks & Reference model - I

1. Distinguish between TCP/IP and OSI Model. 10M
2. Explain B-ISDN ATM reference Model. 10M
3. Explain detail about Network Hardware. How network hardware support the communication of two systems? 10M
4. Describe the Transmission Media. What are the types of Transmission Media? 10M
5. Give brief description about the co-axial cables and also mention their disadvantages. 10M
6. Explain details about ISDN? Describe the types of ISDN? 10M
7. What are the distinct characteristics of local area networks, explain briefly? 10M
Why are a LAN required and what objectives are achieved by having a LAN?
8. Discuss various channels supported by ISDN bit pipe. 10M
9. Describe the Transmission Media. What are the types of Transmission Media? 10M
10. What do you mean by computer network? Classify computer networks and Explain them in brief. 10M

UNIT -II**Data Link Layer**

1. List out and explain the design issues of data link layer 10M
2. Explain how hamming code is used to detect and correct one bit error with an example. 10M
3. Discuss with a suitable example, the hamming code in detail. 10M
4. What is Elementary data link protocols? Explain the sliding window protocols? 10M
5. Explain the data link layer of HDLC 10M
6. What is the check summed frame transmitted if the message is 1101011011 and the generator polynomial is x^4+x+1 using CRC. 10M
7. What is Elementary data link protocols? Explain the sliding window protocols? 10M
8. What is ATM? Describe the design of ATM? 10M
9. Discuss Framing Techniques in brief. 10M
10. What do you mean by sliding window protocol? Distinguish between Go-back-N protocol and selective repeat protocol. 10M

UNIT –III
Data Link Layer

1. Discuss CSMA/CD protocol and its basic functions. 10M
2. What is a token? Discuss the protocol of token ring LAN in general.
Discuss with example how priority is implemented in a token ring LAN. 10M
3. What is pure ALOHA and slotted ALOHA? Mention the advantages of slotted ALOHA.
Discuss with a suitable example, the hamming code in detail. 10M
4. Discuss in detail about the Time Division Multiplexing. 10M
5. Explain the Collision free protocols in details. 10M
6. Describe the working principle of Carrier sense multiple access with collision
Detection (CSMA/CD). 10M
7. Compare transparent and source routing bridges. 10M
8. Describe IEEE Standard 802 for LAN's Ethernet? 10M
9. Draw Ethernet frame format and explain each field. 10M
10. Explain detail about the carrier sense multiple access protocols? 10M

UNIT –IV
Network Layer

1. Explain the count-to-infinity problem and solution in distance vector routing. 10M
2. Give the general principles of various congestion control algorithms. 10M
3. Write short note on General principles of Congestion control. 10M
4. Explain shortest path routing. 10M
5. With an explain discuss how the link state routing uses Dijkstra's algorithm to update the Routing tables. 10M
6. Explain distance vector routing algorithm. 10M
7. Distinguish between Leaky Bucket algorithm and Token Bucket algorithm. 10M
8. Define the term choke packet describe the involvement of choke packets in congestion control. 10M
9. Explain the prevention polices of congestion? 10M
10. Give the details about Coke packets & Load shedding. 10M

UNIT -V
Internetworking

1. Distinguish between transparent and non-transparent fragmentation. 10M
2. What is multicasting? Briefly discuss multicasting techniques and protocols. 10M
3. Describe IP protocol with IPv4 header format. 10M
4. Enumerate the techniques for achieving good quality of service. 10M
5. Discuss the concept of tunneling. 10M
6. What is the significance of Subnetting? Explain Subnetting with an example. 10M
7. Give briefly details about OSPF & BGP? 10M
8. What is ATM? Describe detail about ATM? 10M
9. Explain details about Internet control protocols? 10M
10. A) Define the term tunneling. 03M
B) Discuss various classes of IP address. 03M
C) Explain various qualities of services in network layer. 04M

UNIT –VI
Transport Layer

1. A) What are the functions of transport layer? State transport service primitives. 05M
B) Discuss TCP transmission policy. 05M
2. A) Discuss various flow control mechanisms in transport layer. 05M
B) Briefly discuss about UDP. 05M
3. A) Write a detailed note on transport service primitives. 05M
B) Give brief description about the flow control and buffering. 05M
4. Explain in detail three way handshaking for connection establishment in TCP. 10M
5. How does UDP differ from TCP? List the applications of UDP. 10M
6. Write short notes on Transport layer? How Transport layer supports the connections establish, releasing connection, flow control, buffering & crash recovery? 10M
7. What are the functions of transport layer? State transport service primitives. 10M
8. Write the structure of TCP pseudo header and explain how it is used in checksum calculation. 10M
9. Discuss adaptive retransmission in the transport layer. 10M
10. Define UDP and discuss the different fields of the format of a used datagram. List out the uses of UDP protocol. 10M

UNIT –VII**Application Layer with Network Security**

1. A) Explain the message authentication operation used in RSA technique. . 05M
B) What is meant by firewall? Explain the types of firewall. 05M
2. A) Discuss in detail about the filter based fire walls. 05M
B) Explain the DES algorithm with suitable example. 05M
3. A) Explain how a firewall prevents unauthorized access. 05M
B) With neat sketch explain DES. . 05M
4. A) Describe various characteristics of networks security. 05M
B) Briefly discuss about RSA algorithm. 05M
5. What is the purpose of a firewall? Explain the differences between filter based and proxy based firewalls. 10M
6. What is digital signature? Explain digital signature using message digests. 10M
7. What is a firewall? Explain the different types of firewalls. 10M
8. Explain details about the Authentication protocol? 10M
9. How to prevent the access the website? Where support the Firewalls? 10M
10. Describe details about Cryptographic algorithms? 10M

UNIT –VIII
Application Layer

1. What is electronic mail? Explain the two scenarios of architecture of e-mail. 05M
2. A) Client side web documents. 05M
B) MIME. 05M
3. Explain details about HTTP, SNMP 05M
4. Explain in details about Network management system. 10M
5. Describe importance of DNS in application layer . 10M
6. What is World Wide Web? Explain details about HTTP? 10M
7. Describe details about Traditional applications? 10M
8. Describe details about the SMTP. 10M
9. Give brief description about the DNS 10M
10. What is a name server? List and explain the features of various name servers. 10M

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