End Semester Exam format

	Questions	Mark / Question	TOTAL
Part A	10	1	10
Part B	6	3	18
Part C	6	12 (or) 8+4	72
TOTAL			**100**

Define (Definition and Usage)

1. Protocol
2. IP Spoofing
3. Packet sniffer
4. Categories of physical media in computer network
5. ICMP and its use
6. Hot potato routing in BGP
7. Route selection algorithm in BGP
8. Single bit error
9. Channel partitioning MAC protocols and types
10. Protocol used for secure web communication
11. OSPF Protocol.
12. Burst error
13. ARP protocol
14. Types of Random Access protocols
15. Message authentication code for data integrity and authentication
16. PGP Functionalities for email security
17. Challenges in wireless networks
18. Elements of wireless networks

Differentiate

1. Persistent and Non-persistent HTTP connections
2. Telnet and SSH
3. Congestion control and flow control
4. TCP and UDP
5. SMTP and IMAP
6. Pure ALOHA and Slotted ALOHA
7. DNS iterative query and recursive query
8. Intra AS and Inter AS routing.
9. Point to point and Multipoint connections
10. Client server architecture and peer to peer architecture
11. Packet switching and circuit switching
12. Encryption and Decryption
13. Symmetric key cryptography and Asymmetric key cryptography.
14. IEEE 802.11a and IEEE 802.11b

Explain

1. Different types of network topologies with diagrams
2. TCP/IP layer protocol suite with diagram.
3. DNS record types with examples.
4. Distance Vector Routing Algorithm with example
5. Checksum with an example
6. P2P file distribution
7. Header format of the IPv4 packet and explain all the fields
8. Header format of the IPv6 packet and explain all the fields
9. Random access protocols
10. Various methods and status codes in HTTP
11. Cookies and web caching.
12. Longitudinal Redundancy Check with an example
13. Different types of delay in computer network
14. Different types of Automatic Repeat reQuest (ARQ) protocols.
15. Different types of attacks on authentication protocols and the countermeasures used to mitigate them.
16. Illustrate the process of key generation, encryption, and decryption in RSA cryptography with an example.(Pg 631 to 635, Computer Networking A Top-Down Approach-8th Edition)
17. IEEE 802.11 wireless LAN architecture and the roles of access points.
18. Code Division Multiple Access (CDMA), encoding and decoding process in wireless communication with an example

IP addressing

Predict the network address for the given IP address and subnet mask.

a. <IP address>, <Subnet Mask>

b: <IP address>, <Subnet Mask>

c: <IP address>, <Subnet Mask>

Identify the class for the classful addressing.

a. <IP address>

b. <IP address>

c. <IP address>

Compute

Dijkstra's algorithm

Compute the shortest path from node A to all other nodes in the given network topology using Dijkstra's algorithm.

Hamming Code

Compute the required number of redundant bits for **a 7-bit message** using **Hamming code,** and explain why **3 redundant bits** are insufficient. Using the 7 bit dataword **,** insert and determine the redundant bits.

CRC code:

Compute the CRC code bits for the given dataword,xxxxxxx using the CRC generator polynomial xxxx and calculate the transmitted codeword and explain how the receiver detects errors during transmission.

Scenario

Explain process of email message transmission from say X person and reception by say Y person