This text introduces computer networking, covering various aspects from basic concepts to advanced topics. Section 1 defines computer networks, their purposes (information sharing, resource access, e-commerce, etc.), and elements (clients, servers, media, devices). Network types are categorized physically (PAN, LAN, CAN, MAN, WAN) and logically (peer-to-peer, client-server). Topologies (bus, ring, star, mesh, wireless) are explained, focusing on the advantages of star topology. Section 2 details transmission media (guided and unguided), describing copper (coaxial, twisted-pair) and fiber optic cables, their types, connectors (RJ-45), and crimping. Straight-through and crossover cables are differentiated based on their use cases. Section 3 discusses Medium Access Control (MAC) methods (CSMA/CD, CSMA/CA, Token Ring), communication methods (unicast, multicast, broadcast), and transmission types (simplex, half-duplex, full-duplex). The seven-layer OSI model is presented, detailing each layer's functions and protocols (TCP, UDP, IP, etc.). Section 5 covers network devices: hubs (layer 1), switches (layer 2), bridges (layer 2), and routers (layer 3), explaining their functionalities and the ARP protocol for IP-to-MAC address resolution. ICMP's error reporting and diagnostic functions are also discussed. Section 6 explains IP addresses, their components (network and host addresses), classes (A, B, C), and types (private, public, static, dynamic). DHCP's automatic IP allocation and DNS's domain name resolution are described, including the loopback IP (127.0.0.1). Finally, Section 7 covers subnet masks, their binary and decimal representation, and their role in subnetting, illustrating how subnetting divides a network for efficiency and security. Binary-to-decimal IP address conversion is explained, and examples of subnetting calculations are provided, showing how to determine subnet masks and the number of usable hosts per subnet.