GH raisoni COLLEGE
Engineering and Management Pune

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An Empowered Autonomous Institute, Affiliated to Savitribai Phule Pune University
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Department of MCA

Question Bank: CAE-III

Academic Year: 2024-25

Class: FYMCA Semester: II
Subject- DCCN Subject Code: MCANL204

Sr. No.	Questions	CO	L
1	Explain how a DHCP client obtains an IP address from a DHCP server.	CO4	L2
2	Describe the structure of a DNS query and response message.	CO3	L2
3	Evaluate the robustness of the DNS protocol structure against spoofing attacks.	CO4	L5
4	Describe how the client-server interaction happens in a typical WWW architecture using HTTP.	CO3	L2
5	Analyze a real HTTP message from browser .Break down each part of the message and explain its role.	CO4	L4
6	Compare SMTP and IMAP4 message formats. Highlight differences in client-server interactions.	CO4	L4
7	Describe the flow of email from sender to recipient using SMTP and either POP3 or IMAP4.	CO3	L2
8	Evaluate the security and performances between using SSH tunneling and VPN for accessing remote internal resources.	CO4	L5
9	Explain how TCP handles retransmission and flow control to ensure reliability If a network experiences packet loss,	CO3	L3
10	Discuss Transport Layer The Transport Service with Elements of Transport Protocols	CO4	L2
11	Interprete how a router uses routing tables to forward packets between different networks.	CO3	L2

12	Demonstrate RIP with advantage and disadvantages in networking	CO3	L3	
13	Contrast how flow control is handled in TCP vs. UDP.	CO4	L2	DCCN (1)
14	Analyze the differences in wired and wireless transmission media in terms of bandwidth, range, and security.	CO1	L4	
15	Compare and contrast the MAC address (Physical address), IP address (Logical address), and port address in a network context.	CO1	L4	
16	Demonstrate how a router, switch, and hub work in a network.	CO2	L3	
17	differentiate between Ethernet (802.3) and Wi-Fi (802.11) in terms of data transmission methods and applications.	CO2	L4	
18	Explain how point-to-point WANs work and how they differ from other types of WANs (e.g., circuit-switched or packet-switched networks).	CO2	L2	
19	Differentiate between analog and digital signals.	CO2	L4	
20	Describe data communication & characteristics of Data Communication	CO1	L1	
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22	Apply the concepts of simplex, half-duplex, and full-duplex to explain how communication happens in each mode and give examples of their use.	CO1	L3	
23	Compare the advantages and disadvantages of different network topologies (Star, Bus, Ring).	CO1	L4	
24	Evaluate the suitability of FDDI in a large-scale enterprise network.	CO1	L5	

25	Design OSI model in modern networking compared to the TCP/IP model. What are its advantages and limitations in practice?	CO1	L6
26	Evaluate the suitability of different transmission media (e.g., fiber optics, coaxial, and wireless) for a high-speed, secure enterprise network. Discuss factors like cost, speed, and reliability.	CO1	L5
27	Explain the structure and function of coaxial cables in data transmission.	CO1	L2
28	Analyze the differences in wired and wireless transmission media in terms of bandwidth, range, and security.	CO1	L4
29	Compare and contrast the MAC address (Physical address), IP address (Logical address), and port address in a network context.	CO1	L4
30	Demonstrate how a router, switch, and hub work in a network.	CO2	L3
31	Analyze how error detection works in CRC and Checksum methods, and why each is important in data transmission.	CO2	L4
32	Demonstrate how asynchronous and synchronous protocols are applied to transmit data.	CO2	L3
33	Differentiate between analog and digital signals.	CO2	L4
34	Evaluate ISDN's role in modern communication compared to broadband technologies.	CO2	L5
35	Apply the concept of CSMA/CD to identify how collisions are handled in Ethernet networks.	CO2	L3
36	differentiate between Ethernet (802.3) and Wi-Fi (802.11) in terms of data transmission methods and applications.	CO2	L4
37	Explain how point-to-point WANs work and how they differ from other types of WANs (e.g., circuit-switched or packet-switched networks).	CO2	L2
38	Differentiate between bit rate and baud rate, and how they relate to signal transmission.	CO2	L4
39	Evaluate the effectiveness of different framing, switching, and multiplexing techniques in modern networks.		L5

		CO2	
40	Describe how ISDN integrates voice, video, and data services over a single network connection and explain its advantages over traditional telephone lines.	CO2	L2
41	Compare character-oriented protocols with bit-oriented protocols Analyze their strengths and weaknesses in terms of data transmission	CO2	L4
42	Explain the role of Link Access Procedures in managing how devices access the communication medium and avoid collisions	CO2	L2
43	Explain how CSMA/CD and CSMA/CA work as Media Access Control protocols. How do they differ in handling data transmission and collision management?	CO2	L2
44	Evaluate the effectiveness of CSMA/CD in modern Ethernet networks and compare it to CSMA/CA in Wi-Fi networks.	CO2	L5
45	List the main components of an IPv4 packet format.	CO1	L1
46	Explain the concept of logical and physical addressing. How do they relate to the functioning of a network?	CO2	L2
47	Describe the role of ARP (Address Resolution Protocol) in IPv4 networks.	CO2	L2
48	Explain differences between unicast, multicast, and broadcast addresses? Provide examples in the context of both IPv4 and IPv6.	CO1	L2
49	Interprete how a router uses routing tables to forward packets between different networks.	CO2	L2
50	Describe the difference between intra-domain and inter-domain routing.	CO1	L2
51	Define UDP and list characteristics of it.	CO1	L1
52	Explain how TCP handles retransmission and flow control to ensure reliability If a network experiences packet loss,	CO1	L3
53	Discuss SCTP how does it differ from TCP and UDP in terms of features and usage?	CO2	L2

54	Interpret ARP (Address Resolution Protocol) work to map IP addresses to MAC addresses?	CO2	L2
55	Implement a scenario where SCTP's multi-streaming would be beneficial over traditional TCP.	CO1	L3
56	Describe Forwarding in networking	CO1	L3
57	Discuss fields are present in an IPv4 packet header?	CO2	L2
58	Explain the process of how ARP works to resolve an IP address to a MAC address.	CO1	L2
59	Determine Structure of a Router in networking with routing table	CO2	L3
60	Contrast how flow control is handled in TCP vs. UDP.	CO1	L2
61	Design a system that uses TCP for file transfer and UDP for video streaming. Explain the reasons for choosing each protocol.	CO1	L3
62	Discuss Transport Layer The Transport Service with Elements of Transport Protocols	CO1	L2
63	Demonstrate RIP with advantage and disadvantages in networking	CO2	L3
64	Demonstrate OSPF with advantage and disadvantages in networking	CO2	L3

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Subject Teacher — **HOD**

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