SREENIVASA INSTITUTE OF TECHNOLOGY AND MANAGEMENT STUDIES.
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MCA DEPARTMENT

QUESTION BANK

For

COMPUTER NETWORKS (24MCA114)

Regulation – R24

Academic Year 2025 – 26

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Subject Name : Computer Networks **Subject Code :24MCA114**
Year & Sem :I & I **Academic Year: 2025-26**

S. No	QUESTIONS	Blooms Taxonomy Level
UNIT –I: Introduction		
Uses of Computer Networks- Network Hardware- Network Software- References Models- The Physical Layer: Guided Transmission Media- wireless Transmission- Communication Satellites.		
Part -A		
1.	Define Computer Networks?	Remembering
2.	Define Topology.	Remembering
3.	Explain different types of networks?	Understanding
4.	Explain briefly about LAN?	Understanding
5.	Describe Why are protocols needed?	Understanding
6.	Describe the importance of networking?	Understanding
7.	List two advantages of layering principle in computer networks?	Remembering
8.	List out layers in OSI reference model?	Remembering
9	List out types of guided transmission media	Remembering
10	Describe communication satellite briefly	Understanding
11	Define Station Keeping	Remembering
12	List advantages of Fiber optics cable	Remembering
Part- B		
1	Describe types of computer networks.	Understanding
2	Explain how are OSI and ISO related to each other?	Understanding
3	Explain ISO/OSI Reference model with neat diagram?	Understanding
4	Explain TCP/IP Reference model with neat diagram?	Understanding
5	Define topology and explain the topologies of the network?	Remembering
6	Explain wireless networks 802.11.	Understanding
7	Describe in detail about Guided Transmission Media	Understanding
8	Describe Microwave Transmission Technology	Understanding
9	Explain in detail about Communication Satellite	Understanding
UNIT- II: The Data Link Layer		
Data link layer design issues, error detection and correction, elementary data link protocols, sliding window protocols, and example data link protocols. The unit also introduces the medium access control (MAC) sublayer, including multiple access protocols, Ethernet, Ethernet cabling, Manchester encoding, the Ethernet MAC sublayer protocol, the binary exponential backoff algorithm, Ethernet performance, and wireless LANs.		
Part - A		

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1	Define Framming	Remembering
2	Define Stop and Wait Protocol.	Remembering
3	Explain the flow control mechanism?	Understanding
4	State the functions of MAC?	Remembering
5	Define Piggybacking	Remembering
6	How performance is improved in CSMA/CD protocol compared to CSMA protocol? Explain?	Understanding
7	How CSMA/CA differs from CSMA/CD. Explain in brief?	Understanding
8	Explain the working of carrier sense multiple access protocol?	Remembering
9	Discuss the MAC layer functions of IEEE 802.11?	Remembering
10	What is Manchester encoding?	Remembering
11	Mention any two issues in data link layer design.	Remembering
	Part - B	
1	Explain in detail about Data Link layer design issues.	Understanding
2	Illustrate the use of Hamming Code to correct burst error.	Applying
3	Explain Simplex Protocol in detail.	Understanding
4	Describe Sliding Window protocol.	Understanding
5	Explain about HDLC?	Understanding
6	Describe Ethernet Cabling	Remembering
7	Explain Manchester Encoding	Understanding
8	Describe Binary Exponential Back Off Algorithm in detail.	Understanding
	UNIT- III: The Network Layer	
	Network layer design issues and routing algorithms such as the optimality principle, shortest path routing, flooding, distance vector routing, link state routing, hierarchical routing, broadcast routing, multicast routing, and routing for mobile hosts. It also covers congestion control, congestion prevention policies, quality of service concepts like the leaky bucket algorithm and token bucket algorithm, and finally, the network layer in the Internet, focusing on the IP protocol and IP addresses.	
	Part - A	
1	What are the issues in Network Layer design ?	Understanding
2	Define Routing	Remembering
3	Illustrate Optimality Principle regarding Topology or Traffic	Applying
4	Define Flooding.	Understanding
5	Define Subnet	Understanding
6	What is Count to Infinity Problem? Explain	Understanding
7	Define Congestion.	Understanding
8	Write any two congestion control algorithms.	Understanding
9	Describe Load Shedding	Understanding
10	What is Jitter Control? Explain	Understanding
11	Define Tunneling.	Remembering
12	Explain the role of IP protocol.	Understanding
	Part - B	
1	Distinguish between Connection Oriented and Connection Less Services	Analysis
2	Explain Dijkstra's algorithm to find Shortest path.	Understanding
3	Describe Distant Vector Routing algorithm in detail.	Understanding
4	Discuss Link State Protocol in detail	Understanding
5	List out Congestion Prevention Policies	Understanding
6	Discuss Internetworking Routing	Remembering
7	Explain Fragmentation in detail.	Understanding

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8	Describe IP Protocol and IP Addressing	Applying
9	Explain Classless Inter Domain Routing(CIDR) in detail.	Understanding
	UNIT-IV: The Transport Layer	
The transport service,Elements of transport protocols, and Internet transport protocols including UDP and TCP. The topics include the TCP introduction, service model, protocol, TCP segment header, TCP connection establishment and release, TCP transmission policy, congestion control, and TCP timers.		
	Part- A	
1	Describe Transport Service Primitives briefly	Understanding
2	List Berkeley Sockets primitives	Remembering
3	Define Buffering	Understanding
4	Draw TCP segment Header format	Remembering
5	Define TCP Transmission Policy	Understanding
6	Define UDP protocol.	Understanding
7	What is Transport Service Access Point? Explain	Understanding
8	What is multiplexing?	Understanding
	Part - B	
1	Explain elements of transport layer protocols	Understanding
2	Describe Internet Transport Protocol UDP	Understanding
3	Describe Internet Transport Protocol TCP	Understanding
4	Explain TCP Connection Management Model in detail	Understanding
5	Differentiate TCP and UDP	Analyzing
6	How TCP establish Connection. Explain.	Understanding
7	How Remote Procedure call works? Explain in detail	Understanding
8	Explain TCP Congestion Control in Detail	Understanding
	UNIT- V: The Application Layer	
Domain Name System (DNS), electronic mail, and the World Wide Web. It explains the architectural overview of the WWW, static and dynamic web documents, and the Hypertext Transfer Protocol (HTTP).		
	Part - A	
1	List the advantages of Email?	Remembering
2	Define SMTP?	Remembering
3	Define two methods of HTTP?	Understanding
4	Explain briefly about Name Servers	Understanding
5	Define SMTP?	Remembering
6	Explain the concept of Telnet?	Understanding
7	Define FTP?	Remembering
8	Differentiate between FTP & HTTP?	Analyzing
9	What is the World Wide Web?	Understanding
10	Define web server?	Remembering
	Part - B	
1	Define Domain Name Service (DNS) and explain in detail about the domain hierarchy and name servers?	Remembering
2	Describe Static Web Documents.	Remembering

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3	Describe in detail about the World Wide Web (WWW) ?	Remembering
4	Differentiate Lossy Compression and Lossless Compression?	Analyzing
5	Discuss about formats in detail	Understanding
6	Explain MIME?	Understanding
7	Illustrate the use of MIME Extension?	Applying
8	Explain HTTP methods in detail	Understanding