

**Subject with Code:** COMPUTER NETWORKS(19CS0524)**Course & Branch:** B.Tech - CSE**Regulation:** R19**Year & Sem:** III-B.Tech & II-Sem

**UNIT –I
INTRODUCTION NETWORKS**

1	a	Define computer networks, Specify Computer Network Types.	[L1][CO1]	[6M]
	b	Define Network and elaborate the Network criteria?	[L1][CO1]	[6M]
2		Write about various Network topologies?	[L4][CO1]	[12M]
3		Write about OSI network model.	[L4][CO1]	[12M]
4		Compare OSI and TCP/IP Network models.	[L5][CO1]	[12M]
5		Explain in detail about TCP /IP Network model.	[L2][CO1]	[12M]
6	a	Justify physical layer in computer networks.	[L5][CO1]	[6M]
	b	Discuss about responsibilities of physical layer in detail.	[L2][CO1]	[6M]
7	a	Describe about analog signals.	[L2][CO1]	[6M]
	b	Describe about digital signals.	[L2][CO1]	[6M]
8	a	Illustrate what are the data rate limits in computer networks.	[L3][CO1]	[6M]
	b	Classify performance of the networks.	[L4][CO1]	[6M]
9	a	Categorize and explain types of transmission medias in computer networks.	[L4][CO1]	[6M]
	b	Briefly explain about different guided media.	[L2][CO1]	[6M]
10	a	Write notes on unguided media.	[L4][CO1]	[6M]
	b	Briefly explain about different unguided media.	[L2][CO1]	[6M]

UNIT –II
INTRODUCTION TO DATALINK LAYER

1	a	Write about the services provided by the Data link layer.	[L4][CO2]	[6M]
	b	Classify the Data Link Layer Design Issues.	[L4][CO2]	[6M]
2	a	What is framing? Explain with frame architecture?	[L2][CO2]	[6M]
	b	Describe flow control in data link layer.	[L2][CO2]	[6M]
3	a	Explain briefly about error detection in data link layer.	[L2][CO2]	[6M]
	b	Justify what are the error correction techniques used in data link layer.	[L5][CO2]	[6M]
4	a	Explain Cyclic Redundancy check method used for error detection.	[L2][CO2]	[6M]
	b	Express what checksum in data link layer is.	[L6][CO2]	[6M]
5		Define and explain clearly about data link control services.	[L1][CO2]	[12M]
6		Explain about the Elementary data link protocols?	[L2][CO2]	[12M]
7		Discuss HDLC Protocol with the elaborative explanation of its frames.	[L2][CO2]	[12M]
8		Write about Point to Point (PPP) protocol in detail?	[L4][CO2]	[12M]
9	a	Write about FDMA protocol.	[L4][CO2]	[6M]
	b	Write about TDMA protocol.	[L4][CO2]	[6M]
10	a	Explain in detail about Controlled access protocols which are Used in MAC sub layer	[L2][CO2]	[6M]
	b	Write about Pure slotted ALOHA protocol?	[L4][CO2]	[6M]

UNIT –III
THE NETWORK LAYER

1		What are the network layer design issues explain them.	[L1][CO3]	[12M]
2		Explain in detail about routing algorithms.	[L2][CO3]	[12M]
3		List and explain congestion control algorithms in network layer.	[L1][CO3]	[12M]
4	a	Calculate the Shortest Path Algorithm considering an example.	[L3][CO3]	[6M]
	b	Explain Flooding concept	[L2][CO3]	[6M]
5	a	Write about BGP – Exterior Gateway routing protocol.	[L4][CO3]	[6M]
	b	Elaborate Internet control protocols.	[L4][CO3]	[6M]
6	a	Explain distance vector routing algorithm.	[L2][CO3]	[6M]
	b	Briefly state what is count to infinity problem?	[L3][CO3]	[6M]
7	a	Explain about quality of service in network layer.	[L2][CO3]	[6M]
	b	Describe the term internetworking in network layer.	[L2][CO3]	[6M]
8		Illustrate Link State Routing algorithm to find the route and ages of Routers.	[L3][CO3]	[12M]
9	a	Sketch and explain in detail about IPV4 protocol.	[L3][CO3]	[6M]
	b	Sketch and explain in detail about IPV6 protocol.	[L3][CO3]	[6M]
10	a	Write about BGP – Exterior Gateway routing protocol.	[L4][CO3]	[6M]
	b	Explain Internet control protocols.	[L2][CO3]	[6M]

UNIT –IV
THE TRANSPORT LAYER

1	a	List the transport service primitives.	[L1][CO4]	[6M]
	b	List and define the elements of transport layer.	[L1][CO4]	[6M]
2		Explain about the elements of transport layer.	[L2][CO4]	[12M]
3		Illustrate the different Primitives used for transport service. Elaborate them.	[L3][CO4]	[12M]
4	a	Elaborate each field of TCP segment header with neat diagram.	[L5][CO4]	[6M]
	b	Explain the three way handshake protocols with suitable diagram.	[L2][CO4]	[6M]
5	a	Summarize congestion control in transport layer	[L2][CO4]	[6M]
	b	List and explain internet transport protocols in transport layer.	[L1][CO4]	[6M]
6	a	Describe about TCP connection Establishment	[L2][CO4]	[6M]
	b	Describe about TCP Connection Release	[L2][CO4]	[6M]
7	a	Identify the problems occur during connection establishment.	[L3][CO4]	[6M]
	b	Summarize congestion control in TCP.	[L6][CO4]	[6M]
8		Explain the TCP protocol with neat sketch.	[L2][CO4]	[12M]
9		Write in detail about User Datagram Protocol (UDP).	[L4][CO4]	[12M]
10		Write in detail about performance issues of transport layer.	[L4][CO4]	[12M]

UNIT –V
INTRODUCTION TO APPLICATION LAYER

1	a	Write a short notes on application layer.	[L4][CO5]	[6M]
	b	justify WWW in application layer.	[L6][CO5]	[6M]
2		Write in detail about DNS Name Space and Domain Resource records.	[L4][CO5]	[12M]
3	a	List out the four main properties of HTTP.	[L1][CO5]	[6M]
	b	Illustrate in detail about function and structure of e-mail protocol.	[L3][CO5]	[6M]
4	a	Describe SMTP protocol.	[L2][CO5]	[6M]
	b	Discuss in detail SNMP.	[L2][CO5]	[6M]
5	a	Explain about secure shell in application layer.	[L2][CO5]	[6M]
	b	Summarize in detail about cookies.	[L6][CO5]	[6M]
6		Discuss about File Transfer Protocol with neat diagram.	[L2][CO5]	[12M]
7	a	Write about static web pages.	[L4][CO5]	[6M]
	b	Explain about dynamic web pages.	[L2][CO5]	[6M]
8		Discuss the features of HTTP and explain how HTTP works.	[L2][CO5]	[12M]
9	a	Name the basic functions of E-Mail.	[L1][CO5]	[6M]
	b	Write about TELNET.	[L4][CO5]	[6M]
10		Discuss about File Transfer Protocol with neat diagram.	[L2][CO5]	[12M]

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