Course Code: 18CS0515 **R18**

SIDDHARTH INSTITUTE OF ENGINEERING & TECHNOLOGY:: PUTTUR
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QUESTION BANK (DESCRIPTIVE)

Subject with Code: COMPUTER NETWORKS(18CS0515) **Course & Branch**: B.Tech - CSE

Year &Sem: III-B.Tech & I-Sem **Regulation:** R18

UNIT –I
INTRODUCTION NETWORKS

1	**a**	Define computer network.	[L1][CO1]	**[2M]**
	b	List the layers in OSI reference model.	[L1][CO1]	**[2M]**
	c	Name the functions of network layer.	[L1][CO1]	**[2M]**
	d	Define throughput.	[L1][CO1]	**[2M]**
	e	List the layers in TCP/IP reference model.	[L1][CO1]	**[2M]**
	f	Identify basic physical topologies possible for a network.	[L1][CO1]	**[2M]**
	g	Sketch Ring Topology network model.	[L3][CO1]	**[2M]**
	h	Define Internet.	[L1][CO1]	**[2M]**
	i	Explain the concept of multiplexing and de-multiplexing.	[L2][CO1]	**[2M]**
	j	What is attenuation and how it can be compensated.	[L2][CO1]	**[2M]**
	k	Name the advantages of fiber optic cable.	[L1][CO1]	**[2M]**
	l	List the different types of transmission media.	[L1][CO1]	**[2M]**
	m	Explain about infrared waves.	[L2][CO1]	**[2M]**
2	**a**	Compare Connection oriented and connectionless service.	[L4][CO1]	**[5M]**
	b	Discover the design issues of layers.	[L2][CO1]	**[5M]**
3		Justify “Fiber optic cable is better than other guided media”.	[L6][CO1]	**[10M]**
4	**a**	Tell in detail about twisted pair cable working.	[L5][CO1]	**[5M]**
	b	Briefly explain about Coaxial cable.	[L2][CO1]	**[5M]**
5		Review various Network topologies.	[L2][CO1]	**[10M]**
6		Writeabout OSI network model.	[L3][CO1]	**[10M]**
7		Compare OSI and TCP/IP Network models.	[L4][CO1]	**[10M]**
8		Explain in detail about TCP /IP Network model.	[L2][CO1]	**[10M]**
9	**a**	Summarize various network types.	[L5][CO1]	**[5M]**
	b	Illustrate the architecture of Internet.	[L4][CO1]	**[5M]**
10		Give the description of wireless transmission media.	[L2][CO1]	**[10M]**

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UNIT –II
INTRODUCTION TO DATALINK LAYER

1	**a**	Illustrate the process of flow control.	[L4][CO2]	**[2M]**
	b	Define ARP.	[L1][CO2]	**[2M]**
	c	Describe the process of stop and wait protocol.	[L2][CO2]	**[2M]**
	d	State the process of Stop and Wait ARQ.	[L1][CO2]	**[2M]**
	e	Sketch the HDLC frame.	[L3][CO2]	**[2M]**
	f	List the address fields of PPP.	[L1][CO2]	**[2M]**
	g	Identify the services provided by the data link layer.	[L1][CO2]	**[2M]**
	h	Summarize about the two sub layers of data link layers.	[L5][CO2]	**[2M]**
	i	What are the three types of addresses defined in data link layer.	[L1][CO2]	**[2M]**
	j	Give example byte stuffing.	[L2][CO2]	**[2M]**
	k	Compare FDMA and TDMA.	[L4][CO2]	**[2M]**
	l	What are the different communication modes in HDLC?	[L1][CO2]	**[2M]**
2		Discuss bit-oriented HDLC Protocol with the elaborative explanation of its frames	[L2][CO2]	**[10M]**
3		Solve Cyclic Redundancy check method used for error detection.	[L3][CO2]	**[10M]**
4		Extend about the Elementary data link protocols.	[L2][CO2]	**[10M]**
5	**a**	Describe the process of U-Frame.	[L2][CO2]	**[3M]**
	b	Write about the services provided by the Data link layer.	[L5][CO2]	**[7M]**
6		Interpret application of Point to Point (PPP) protocol in data link layer.	[L6][CO2]	**[10M]**
7	**a**	Discuss about GO BACK N Protocol.	[L2][CO2]	**[5M]**
	b	Explain Selective repeat Protocol.	[L2][CO2]	**[5M]**
8		Relate and explain Pure ALOHA and slotted ALOHA protocols.	[L5][CO2]	**[10M]**
9		Explain about CSMA/CA protocol.	[L2][CO2]	**[10M]**
10		Generalize the Controlled access protocols which are used in MAC sublayer.	[L2][CO2]	**[10M]**

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UNIT –III
THE NETWORK LAYER

1	**a**	Quote optimality principle.	[L1][CO3]	**[2M]**
	b	Explain the process in broadcasting.	[L2][CO3]	**[2M]**
	c	Define spanning tree.	[L1][CO3]	**[2M]**
	d	In routing what is meant by "FORWARDING".	[L1][CO3]	**[2M]**
	e	Define routing algorithm.	[L1][CO3]	**[2M]**
	f	What is virtual circuit?	[L1][CO3]	**[2M]**
	g	What is static routing algorithm?	[L2][CO3]	**[2M]**
	h	Describe about dynamic routing algorithm.	[L2][CO3]	**[2M]**
	i	State the process of optimality principal.	[L1][CO3]	**[2M]**
	j	List the names of two dynamic routing algorithms.	[L1][CO3]	**[2M]**
	k	Write about broadcasting.	[L3][CO3]	**[2M]**
	l	Define multicasting.	[L1][CO3]	**[2M]**
	m	Interrupt how the routers get the information about neighbor?	[L6][CO3]	**[2M]**
	n	Tell about traffic aware routing.	[L5][CO3]	**[2M]**
2		Explain in detail about congestion control algorithms.	[L2][CO3]	**[8M]**
3	**a**	List and explain out any five principles of network layer in the Internet.	[L6][CO3]	**[3M]**
	b	Demonstrate about IPv6 protocol.	[L3][CO3]	**[7M]**
4	**a**	Calculate the Shortest Path Algorithm considering an example.	[L3][CO3]	**[7M]**
	b	Explain Flooding concept	[L2][CO3]	**[3M]**
5	**a**	Write about BGP – Exterior Gateway routing protocol.	[L5][CO3]	**[3M]**
	b	Elaborate Internet control protocols.	[L5][CO3]	**[7M]**
6	**a**	Explain distance vector routing algorithm.	[L2][CO3]	**[5M]**
	b	Briefly state what is count to infinity problem?	[L2][CO3]	**[5M]**
7	**a**	Illustrate about leaky bucket algorithm.	[L3][CO3]	**[5M]**
	b	Discuss Token bucket algorithm with neat diagram .	[L2][CO3]	**[5M]**
8		Illustrate Link State Routing algorithm to find the route and ages of routers.	[L2][CO3]	**[10M]**
9		Sketch and explain in detail about IPV4 protocol.	[L3][CO3]	**[10M]**
10		Compare Virtual circuit network and Datagram network with diagrams.	[L4][CO3]	**[10M]**

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UNIT –IV
THE TRANSPORT LAYER

1	**a**	List any three differences between TCP & UDP.	[L4][CO4]	**[2M]**
	b	Give the Use of multiplexing.	[L1][CO4]	**[2M]**
	c	Define RPC.	[L1][CO4]	**[2M]**
	d	What is the process of marshaling?	[L1][CO4]	**[2M]**
	e	Expand the following a) DCCP b) SCTP c) SST d) TSAP	[L1][CO4]	**[2M]**
	f	The transport layer creates the connection between source and destination. Evaluate the threeevents involved in the connection?	[L5][CO4]	**[2M]**
	g	Discuss the types of payload.	[L2][CO4]	**[2M]**
	h	Distinguish between contention and congestion.	[L4][CO4]	**[2M]**
	i	State the use of SYN and FIN bits in TCP.	[L1][CO4]	**[2M]**
	j	Explain crash recovery.	[L2][CO4]	**[2M]**
2	**a**	List the transport service primitives.	[L1][CO4]	**[3M]**
	b	Explain about the elements of transport layer.	[L2][CO4]	**[7M]**
3		Illustrate the different Primitives used for transport service. Elaborate them.	[L2][CO4]	**[10M]**
4		Elaborate each field of TCP segment header with neat diagram.	[L5][CO4]	**[10M]**
5		Explain the three way handshake protocols with suitable diagram.	[L2][CO4]	**[10M]**
6	**a**	Describe about i) TCP connection Establishment	[L1][CO4]	**[5M]**
	b	ii) TCP Connection Release	[L1][CO4]	**[5M]**
7	**a**	Identify the problems occur during connection establishment.	[L2][CO4]	**[2M]**
	b	Summarize congestion control in TCP.	[L6][CO4]	**[8M]**
8		Correlate the various timers used by TCP to perform its various operations	[L4][CO4]	**[10M]**
9	**a**	Analyze the use of real time transport protocol?	[L4][CO4]	**[3M]**
	b	Write in detail about performance issues of transport layer.	[L5][CO4]	**[7M]**
10	**a**	Explain the TCP protocol with neat sketch.	[L2][CO4]	**[5M]**
	b	Write in detail about User Datagram Protocol (UDP).	[L3][CO4]	**[5M]**

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UNIT –V
INTRODUCTION TO APPLICATION LAYER

1	**a**	State the purpose of SNMP.	[L1][CO5]	**[2M]**
	b	Explain the concept of telnet.	[L2][CO5]	**[2M]**
	c	Tell the responsibilities of application layer.	[L1][CO5]	**[2M]**
	d	Sketch TCP segment header.	[L3][CO5]	**[2M]**
	e	What is the use of File Transfer Protocol?	[L1][CO5]	**[2M]**
	f	Label the types of messages in HTTP transaction.	[L1][CO5]	**[2M]**
	g	Differentiate between FTP and HTTP.	[L4][CO5]	**[2M]**
	h	List two applications of application layer.	[L1][CO5]	**[2M]**
	i	Explain DNS Name space.	[L2][CO5]	**[2M]**
	j	Discuss the purpose of domain name system.	[L2][CO5]	**[2M]**
2		Write in detail about DNS Name Space and Domain Resource records.	[L5][CO5]	**[10M]**
3	**a**	List out the four main properties of HTTP.	[L1][CO5]	**[2M]**
	b	Illustrate in detail about function and structure of e-mail protocol.	[L3][CO5]	**[8M]**
4		Describe SMTP protocol.	[L2][CO5]	**[10M]**
5		Discuss in detail about World Wide Web.	[L2][CO5]	**[10M]**
6		Summarize in detail about cookies.	[L6][CO5]	**[10M]**
7	**a**	Write about static web pages.	[L3][CO5]	**[5M]**
	b	Explain about dynamic web pages.	[L2][CO5]	**[5M]**
8		Discuss the features of HTTP and explain how HTTP works.	[L2][CO5]	**[10M]**
9	**a**	Name the basic functions of E-Mail.	[L1][CO5]	**[3M]**
	b	Write about TELNET.	[L5][CO5]	**[7M]**
10		Discuss about File Transfer Protocol with neat diagram.	[L2][CO5]	**[10M]**

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