Course Code: 18CI0610 **R18**

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

Subject with Code: Internetworking with TCP/IP (18CI0610) **Course & Branch**: B.Tech - CSIT

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

UNIT –I
THE OSI MODEL AND THE TCP/IP PROTOCOL SUITE, IPV4 ADDRESSES

1	Explain about the purpose of each layer in the OSI Model.	[L2][CO1]	**[12M]**
2	(a) Discuss the purpose of each layer in the TCP/IP protocol suite	[L6][CO1]	**[6M]**
	(b) Explain the various types of options in IPV4 header.	[L2][CO1]	**[6M]**
3	What are the Addressing types? Explain with an example	[L1][CO1]	**[12M]**
4	(a) Compare between OSI and TCP/IP protocol suite.	[L2][CO1]	**[6M]**
	(b) Discuss about Logical and Physical addresses.	[L6][CO1]	**[6M]**
5	What is IP address? Explain about IPV4 Datagram.	[L1][CO1]	**[12M]**
6	(a) Discuss the four levels of addresses used in an internet employing the TCP/IP protocols.	[L6][CO1]	**[6M]**
	(b) Explain the fields related to fragmentation and reassembly of an IP datagram.	[L2][CO1]	**[6M]**
7	(a) Illustrate the significance of sub-network mask.	[L2][CO1]	**[6M]**
	(b) Explain how classless addressing address the problem of address depletion.	[L2][CO1]	**[6M]**
8	Discuss about Classful addressing in detail.	[L6][CO1]	**[12M]**
9	Write notes on the following: **(a)** IPV4 Options	[L1][CO1]	**[6M]**
	(b) Check sum calculation	[L1][CO1]	**[6M]**
10	Write short notes on the following: (a) Special Addresses	[L1][CO1]	**[6M]**
	(b) NAT	[L1][CO1]	**[6M]**

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UNIT –II
ADDRESS RESOLUTION PROTOCOL, INTERNET CONTROL MESSAGE PROTOCOL V4

1	(a) With a neat diagram explain the significance of ATMARP packet.	[L1][CO2]	**[6M]**
	(b) List and describe the five types of error reporting messages in ICMPv4	[L1][C02]	**[6M]**
2	(a) What is Address mapping? Explain.	[L1][CO2]	**[6M]**
	(b) Illustrate the message types in ICMPv4.	[L2][CO2]	**[6M]**
3	Discuss in detail about ARP Protocol	[L6][CO2]	**[12M]**
4	Explain in detail about ICMPv4 messages	[L2][CO2]	**[12M]**
5	(a)With neat diagrams explain the four different cases in which the services of ARP can be used.	[L2][CO2]	**[6M]**
	(b)Explain the various tools of links used in the internet for debugging.	[L2][CO2]	**[6M]**
6	(a)Write short notes on ARP Package	[L1][CO2]	**[6M]**
	(b) Illustrate Packet Format of ICMP.	[L1][CO2]	**[6M]**
7	(a) With a neat diagram explain the significance of ATMARP packet.	[L2][CO2]	**[6M]**
	(b)List and describe the five types of error reporting messages.	[L1][C02]	**[6M]**
8	Explain in detail about Debugging tools	[L2][CO2]	**[12M]**
9	How to identify Physical address from Logical Address? Illustrate details.	[L1][CO2]	**[12M]**
10	Write short notes on the following (a) ATMARP	[L1][CO2]	**[6M]**
	(b) ICMP Query messages	[L1][CO2]	**[6M]**

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UNIT –III

UNICAST ROUTING PROTOCOLS (RIP, OSPE, AND BGP)

1	a) Explain with an example the concept of link state routing.	[L2][CO3]	**[6M]**
	b) Describe the five different types of OSPF packets.	[L2][CO3]	**[6M]**
2	a) List the considerations used by RIP while directly implementing distance vector routing.	[L1][CO3]	**[6M]**
	b) Discuss BGP in detail.	[L6][CO3]	**[6M]**
3	a) Explain with an example the two-node loop problem. Also give the solutions to this problem.	[L2][CO3]	**[6M]**
	b) Describe the types of links defined in OSPF.	[L2][CO3]	**[6M]**
4	a) With an example explain distance vector routing algorithm.	[L2][CO3]	**[6M]**
	b) Explain in detail about path vector routing.	[L2][CO3]	**[6M]**
5	Write short notes on the following a) Static versus Dynamic Routing Tables	[L1][CO3]	**[4M]**
	a) Routing Protocol	[L1][CO3]	**[4M]**
	b) Cost or metric	[L1][CO3]	**[4M]**
6	Explain with an example about Intra- and Inter- domain Routing.	[L2][CO3]	**[12M]**
7	What is Distance Vector Routing? Explain with an example	[L1,L2][CO3]	**[12M]**
8	Explain in detail about Routing Information Protocol(RIP)	[L2][CO3]	**[12M]**
9	What are the types of BGP messages? Explain.	[L1,L2][CO3]	**[12M]**
10	Write Pseudo code for a) Bellman-Ford Algorithm	[L1][CO3]	**[6M]**
	b) Distance Vector Routing Algorithm	[L1][CO3]	**[6M]**

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UNIT –IV
USER DATAGRAM PROTOCOL AND TRANSMISSION CONTROL PROTOCOL

1	What is UDP? Explain UDP Packet in detail.	[L1,L2][CO4]	**[12M]**
2	Write in detail about UDP package.	[L2][CO4]	**[12M]**
3	a) With an example explain how to calculate checksum of a UDP use datagram.	[L2][CO4]	**[6M]**
	b) Give the format of TCP segment header and explain the significance of each field.	[L2][CO4]	**[6M]**
4	a) Give the format of UDP header and explain the significance of each field.	[L2][CO4]	**[6M]**
	b) Explain three-way handshaking for connection termination.	[L2][CO4]	**[6M]**
5	a) List the typical applications that can benefit more from services of UDP than from those of TCP.	[L1][CO4]	**[6M]**
	b) Discuss TCP features in detail.	[L6][CO4]	**[6M]**
6	a) Describe the general services provided by UDP.	[L2][CO4]	**[6M]**
	b) Explain connection establishment in TCP using three-way handshaking.	[L2][CO4]	**[6M]**
7	Discuss in detail about UDP Services	[L6][CO4]	**[12M]**
8	Write short notes on the following: a) UDP Applications	[L1][CO4]	**[6M]**
	b) TCP features	[L1][CO4]	**[6M]**
9	Draw and explain about TCP segment	[L2][CO4]	**[12M]**
10	What is a TCP Connection? Explain in detail	[L1,L2][CO4]	**[12M]**

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UNIT –V

WINDOWS IN TCP, ICMPV6 PROTOCOL AND ICMPV6

1	Write short notes on the following: a) Send Window	[L1][CO5]	**[6M]**
	b) Receive Window	[L1][CO5]	**[6M]**
2	a) What is Error control in TCP? Explain.	[L1,L2][CO5]	**[6M]**
	b) Discuss Congestion control mechanisms	[L6][CO5]	**[6M]**
3	a) Explain how TCP provider reliability using errors control.	[L2][CO5]	**[6M]**
	b) Discuss about the options. Explain with format	[L6][CO5]	**[6M]**
4	a) Explain Silly window syndrome. Give the two solutions to prevent it.	[L2][CO5]	**[6M]**
	b) Discuss the five components of TCP Package and their interactions.	[L6][CO5]	**[6M]**
5	a) Explain congestion control in TCP.	[L2][CO5]	**[6M]**
	b) Describe the four TCP timers.	[L6][CO5]	**[6M]**
6	What is IPv6? Explain Packet format.	[L1,L2][CO5]	**[12M]**
7	a) Describe the six types of extension headers in IPV6 header.	[L2][CO5]	**[6M]**
	b) Explain the transition from IPv4 to IPv6.	[L2][CO5]	**[6M]**
8	a) Make a comparison between IPV4 and IPV6 headers.	[L2][CO5]	**[6M]**
	b) Explain ICMPV6 error-reporting messages.	[L2][CO5]	**[6M]**
9	a) Discuss error messages in ICMPV6 and compare and contrast them with the error messages in ICMPV4.	[L6,L2][CO5]	**[6M]**
	b) Explain the significance of each field in the format of the IPV6 base header.	[L2][CO5]	**[6M]**
10	Write short notes on the following: a) Error Messages	[L1][CO5]	**[4M]**
	b) Informational Messages	[L1][CO5]	**[4M]**
	c) Group Membership Messages	[L1][CO5]	**[4M]**

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