



SREENIVASA INSTITUTE OF TECHNOLOGY AND MANAGEMENT STUDIES

(Autonomous)

DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

QUESTION BANK

16ECE414D -COMPUTER NETWORKS

Question No.	Questions	PO Attainment
UNIT – 1		
PART A (2 Marks)		
1	Define the term communication.	PO1
2	Mention the fundamental characteristics of data communication systems.	PO2
3	Mention the components of Data communication system.	PO2
4	Define Network?	PO1
5	List the layers of the OSI model.	PO1
6	Distinguish circuit switching and packet switching.	PO4
7	Define Framing.	PO1
8	Differentiate guided and unguided transmission medium.	PO1, PO2
9	Give the classifications of computer networks.	PO1
10	List out the uses of computer networks.	PO1
11	Mention the advantages of having computer networks.	PO2
12	What's meant by line configuration?	PO1
13	What's meant by Topology of a network?	PO1
14	What's a hub?	PO1
15	What's meant by transmission mode Mention its types?	PO1
16	What's a LAN?	PO1
17	What's MAN?	PO1
18	What's WAN?	PO1
19	What's protocol?	PO1
20	Mention the types of conversion of data.	PO2
21	What's a modem?	PO1
22	List the design factors for transmission media.	PO1
23	What is the difference between network delivery and Transport layer delivery?	PO1
24	What are the responsibilities of the session layer?	PO1
25	What are the responsibilities of the physical layer?	PO1
26	What are the responsibilities of the network layer?	PO1
27	What are the responsibilities of the application layer?	PO1
28	What are the responsibilities of the datalink layer?	PO1
29	What are the responsibilities of the presentation layer?	PO1
30	What are the responsibilities of the transport layer?	PO1
31	Draw the ISO-OSI Reference model.	PO1, PO2,PO3
32	Mention the layers of the TCP/IP Reference model	PO1, PO2



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PART-B (10 Marks)

1	How do the layers of the internet model correlate to the layers of the OSI model	PO1, PO2
2	What is a peer- to- peer process?	PO1
3	Compare and contrast the OSI and TCP/IP reference models.	PO1, PO2
4	Describe Wide Area Networks.	PO1, PO2
5	Write short notes on Arpanet.	PO1
6	Explain the TCP/ IP reference model.	PO1, PO2
7	What is the difference between a port address, a logical address and a physical address?	PO1, PO2
8	Explain local area network.	PO1, PO2
9	Explain in detail the OSI reference model.	PO1, PO2
10	Write the advantages of optical fiber over twisted- pair and coaxial cables.	PO1, PO2
11	Write the differences between message switching and packet switching.	PO1, PO2
12	Why does ATM uses small and fixed length cells?	PO1, PO2
13	What is the significance of the twisting in twisted- pair cable?	PO1
14	Explain the detail the Batcher- Banyan ATM switch.	PO1, PO2
15	Explain about coaxial cable.	PO1, PO2
16	Explain the time division switch	PO1, PO2
17	How do guided media differ from unguided media?	PO1, PO2
18	Explain in detail the ATM reference model.	PO1, PO2

UNIT – 2

PART A (2 Marks)

1	What are the three main functions of the data link layer?	PO1
2	Draw the frame format for bit oriented protocols.	PO1, PO2
3	What is the purpose of Network Interface Card?	PO1
4	What is the use of IP address?	PO1
5	What is abbreviation of ARQ?	PO1
6	What is piggybacking?	PO1
7	Name and discuss briefly the bits in the HDLC control field.	PO1, PO2
8	What is Bit stuffing? Apply Bit Stuffing for the given data: 011011111111111111110010	PO1, PO2, PO3
9	What is CSMA/CD?	PO1
10	Describe Aloha protocol?	PO1



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11	Define checksum.	PO1
12	Define flow control?	PO1
13	Need of selective repeat	PO1, PO2
14	Need of Go-back N.	PO1, PO2
15	What is Ethernet?	PO1
16	Define the term carrier sense in CSMA/CD?	PO1
17	Define collision detection?	PO1
18	Explain Bridge?	PO1, PO2
19	What is broadcast?	PO1
20	Differentiate persistent and non-persistent.	PO1, PO2, PO3
21	What are the access methods used by wireless LAN?	PO1
22	What is the purpose of Network Interface Card.	PO1
23	How to avoid channel allocation problem.	PO1, PO2
24	What is the need of ARP?	PO1
25	What are the functions of MAC?	PO1
PART-B (10 Marks)		
1	Explain any two elementary data link protocols.	PO1, PO2, PO3
2	A bit string, 011110111110111110, needs to be transmitted at the data link layer. What is the string actually transmitted after bit stuffing?	PO1, PO2, PO3
3	Compare and contrast flow control and error control.	PO1, PO2, PO3
4	Explain the sliding window protocol.	PO1, PO2
5	Explain the design issues of data link layer.	PO1, PO2
6	Define piggybacking and write its uses.	PO1
7	Data link protocols almost always put the CRC in a trailer rather than in a header. Why?	PO1
8	Explain in detail selective report and go Back N sliding window protocols.	PO1, PO2
9	Explain the point-to- point protocol.	PO1, PO2
10	Explain the HDLC protocol	PO1, PO2
11	Describe the static channel allocation in LANs and MANs.	PO1, PO2
12	Explain Bit-Map and Binary Countdown collision- free protocols.	PO1, PO2
13	List and explain the key assumptions of dynamic channel allocation methods.	PO1



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14	Sketch the Manchester encoding for the bit stream: 0001110101.	PO3
15	What is the relationship between a switch and bridge?	PO1, PO2
16	What is the purpose of an NIC?	PO1
17	Why there is no need for CSMA/CD on a full-duplex Ethernet LAN?	PO1, PO2
18	Explain about ALOHA.	PO1, PO2
19	Explain CSMA with collection detection protocol	PO1, PO2
20	Sketch the differential manchester encoding for the bit stream: 0001110101.	PO3

UNIT – 3

PART A (2 Marks)

1	Expand ICMP and write the function.	PO1, PO2
2	Write the types of connecting devices in internetworking.	PO1, PO2
3	Identify the class of the following IP address.	PO1, PO2
4	Why IPV6 is preferred than IPV4?	PO1, PO2
5	What is the use of multicast routing?	PO1
6	Define ICMP.	PO1
7	Give the comparison of unicast, multicast and broadcast routing.	PO1, PO2
8	Define routing.	PO1
9	Define BGP.	PO1
10	What is the use of Network Address Translation?	PO1
11	Write the keys for understanding the distance vector routing.	PO1
12	Define Switching.	PO1
13	List the objectives of routers.	PO1
14	What is meant by AS?	PO1
15	What are the uses of bridges?	PO1
16	Why is IPV4 to IPV6 transition required?	PO1
17	What is DVMARP?	PO1
18	Define fragmentation in multicast.	PO1
19	Define packet switching?	PO1
20	What is a virtual circuit?	PO1
21	What are data grams?	PO1
22	What are the features in OSPF?	PO1
23	What is meant by congestion?	PO1

PART-B (10 Marks)

1	What is the difference between a unicast, a multicast and broadcast routing algorithms?	PO1
2	Compare virtual circuit and datagram subnets.	PO1, PO2



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3	Explain link state routing in detail.	
4	Describe the optimality principle of routing algorithms.	PO1, PO2
5	Explain the different routing algorithm.	PO1, PO2
6	Explain the shortest path routing with an example.	PO1, PO2
7	Give two example applications for which connection oriented service is appropriate.	PO1
8	Explain distance vector routing algorithm.	PO1, PO2
9	Compare and contrast distance vector routing with link state routing.	PO1, PO2
10	Explain multicast routing in detail.	PO1, PO2
11	What are the differences between classfull addressing and classless addressing in IPv4.	PO1
12	Explain the token bucket congestion control algorithm.	PO1, PO2
13	Explain the congestion prevention policies at various levels.	PO1, PO2
14	What is NAT? How can NAT help in address depletion?	PO1
15	Describe the way to reassemble IP fragments at the destination.	PO1, PO2
16	Describe Tunneling.	PO1, PO2
17	Explain the IPv4 header format.	PO1, PO2
18	The protocol field used in IPv4 header is not present in fixed IPv6 header. Why?	PO1
19	Explain the principles of congestion control.	PO1, PO2
20	Explain the congestion control algorithm.	PO1, PO2
21	Explain the IPv6 header format.	PO1, PO2

UNIT – 4

PART A (2 Marks)

1	Explain the main idea of UDP?	PO1, PO2
2	Define TCP?	PO1
3	Define Congestion Control?	PO1
4	What is meant by segment?	PO1
5	Define Gateway.	PO1
6	What is meant by quality of service?	PO1
7	What are the two categories of QoS attributes?	PO1
8	What is Silly Window Syndrome?	PO1
9	What is fragmentation and reassembly?	PO1



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10	Differentiate between TCP and UDP.	PO1, PO2
11	What is the difference between congestion control and flow control?	PO1
PART-B (10 Marks)		
1	List and explain the socket primitives used in Berkeley UNIX for TCP.	PO1
2	Explain the TCP connection management.	PO1, PO2
3	List the fields in the TCP header that are missing from UDP header. Give the reason for their absence.	PO1
4	Briefly explain the elements of the transport protocols.	PO1
5	Explain the services provided by the transport layer to the upper layers.	PO1, PO2
6	What is the minimum size and maximum size of the process data that can be encapsulated in a UDP datagram?	PO1
7	Describe the structure of the ATM adaptation layer.	PO1, PO2
8	Compare the TCP header and UDP header.	PO1, PO2
9	Explain flow control and buffering in transport layer.	PO1, PO2
10	Why do we need a DNS system when we can directly use an IP address?	PO1
11	Explain the session initiation protocol.	PO1, PO2
12	Write short notes on URL.	PO1
UNIT – 5		
PART A (2 Marks)		
1	Mention the different levels in domain name space.	PO2
2	Expand POP3 and IMAP4.	PO1
3	What are the main categories of DNS messages?	PO1
4	Mention the types of HTTP messages.	PO2
5	What is SMTP?	PO1
6	What do you mean by TELNET?	PO1
7	State the difference between SMTP and MIME.	PO1, PO2
8	Define Security in networking.	PO1
9	Define HTML.	PO1
10	Define HTTP.	PO1
11	Why the HTTP is called as stateless protocol?	PO1
12	What is HTTP? List the features of HTTP.	PO1
13	Write the components used in e-mail system.	PO1
14	Define SMTP.	PO1
15	Define Cryptography	PO1
PART-B (10 Marks)		



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1	Write short notes on the following: (a) MIME (b) CRYPTOGRAPHY (c) DNS (d) WWW (e) E-MAIL (f) SMTP (g) FTP	PO1, PO2, PO3
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SITAMS