INSTITUTE OF AERONAUTICAL ENGINEERING

(Autonomous)

Dundigal, Hyderabad - 500 043

ELECTRONICS AND COMMUNICATION ENGINEERING

ASSIGNMENT QUESTIONS

Course Name	:	COMPUTER NETWORKS
Course Code	:	A70515-R15
Class	:	IV B. Tech I Semester
Branch	:	Electronics and Communication Engineering
Year	:	2018 – 2019
Course Coordinator	:	Mr. P Ravinder, Associate Professor, CSE.
Course Faculty	:	Mr. P Ravinder, Associate Professor, CSE. Mr. C Raghavendra, Associate Professor, CSE. Ms. M Geetha Yadav, Assistant Professor, CSE. Ms. B Geethavani, Assistant Professor, CSE.

OBJECTIVES:

To meet the challenge of ensuring excellence in engineering education, the issue of quality needs to be addressed, debated and taken forward in a systematic manner. Accreditation is the principal means of quality assurance in higher education. The major emphasis of accreditation process is to measure the outcomes of the program that is being accredited.

In line with this, Faculty of Institute of Aeronautical Engineering, Hyderabad has taken a lead in incorporating philosophy of outcome based education in the process of problem solving and career development. So, all students of the institute should understand the depth and approach of course to be taught through this question bank, which will enhance learner's learning process.

ASSIGNMENT – I

S. No	Questions	Blooms Taxonomy Level	Course Outcome
	UNIT – I		
1.	List two advantages of layering principle in computer networks.	Remember	2
2.	Explain the role of ARPANET in computer networks.	Remember	2
3.	Distinguish between baseband transmission and broadband transmission.	Understand	2
4.	Suggest two points to improve the performance of network.	Understand	1
5.	Write the responsibilities of the data link layer in the Internet model.	Understand	2
6.	Distinguish between baseband transmission and broadband transmission.	Understand	2
7.	Define topology and explain the topologies of the network.	Understand	2
8.	Find out the utilization of channel (Consider a 1 km 10Mbps channel) when 100 nodes are connected in an Ethernet configuration? If the channel is converted to a ring, running token ring, what would be the utilization of the channel? Assume fixed frame size of 1024 bits in both cases?	Understand	2
9.	Explain in detail the different transmission media and compare and contrast them of cost, speed, security, attenuation and other in terms of relevant Characteristics.	Understand	1

S. No	Questions	Blooms Taxonomy Level	Course Outcome
10.	Explain why sliding window flow control is considered to be more efficient than stop and wait flow control.	Understand	2

UNIT – II

S. No	Questions	Blooms Taxonomy Level	Course Outcome
1.	Define vulnerable period? How it affects the performance in MAC Protocols.	Understand	3
2.	Explain how throughput is improved in slotted ALOHA over pure ALOHA.	Remember	3
3.	Define parameter 'a'? How does it affect the performance of the CSMA Protocol	Understand	3
4.	Define parameter 'a'? How does it affect the performance of the CSMA Protocol?	Remember	3
5.	Explain how throughput is improved in slotted ALOHA over pure ALOHA.	Understand	4
6.	Distinguish between FDMA and TDMA.	Remember	3
7.	Explain how a Token Ring LAN operates? Discuss that can be used to set up wireless LAN's.	Understand	3
8.	Assume that a portion y of every transmitted packet is overhead (e.g., address, sync bits, etc.). a) What will be the throughput delay characteristic of an FDMA channel? b) What will be the throughput delay characteristic of a TDMA channel	Remember	4
9.	Compare the first two moments of the distribution of the queuing time of FDMA with that of TDMA (Note: the queuing time does not include the actual transmission time).	Understand	3
10.	Name the four basic network topologies and explain them giving all the Relevant features.	Understand	4

UNIT – III

S. No	Questions	Blooms Taxonomy Level	Course Outcome
1.	List out network support layers and user support layers.	Understand	5
2.	Explain internet protocol with the neat block diagram of IP header.	Remember	6
3.	Describe two groups of multicast routing protocol.	Understand	5
4.	Describe the routing information protocol and distance vector routing Protocol.	Remember	6
5.	Explain Link State Routing algorithm with an example.	Understand	6

ASSIGNMENT – II

S. No	Questions	Blooms Taxonomy Level	Course Outcome
7.	Define BGP protocol. Describe its routing functionality in detail.	Remember	5
8.	Explain Distance Vector algorithm. Mention the limitation of Distance Vector routing algorithm.	Understand	6
9.	Write short notes on. a) X.25 b) ARP	Understand	6
10.	Show a routing table for a host that is connected to a LAN without being connected to internet? Explain.	Understand	6

UNIT – IV

S. No	Questions	Blooms Taxonomy Level	Course Outcome
1.	Explain the TCP Connection establishment and termination using Time-line Diagram.	Understand	7

2.	Illustrate data units at different layers of the TCP / IP protocol suite.	Remember	7
3.	Illustrate data units at different layers of the TCP / IP protocol suite.	Understand	8
4.	Explain how an application process running in one host is addressed to another process through TCP.	Remember	7
5.	Describe the three way handshake protocol to establish the transport level Connection.	Understand	7
6.	Differentiate between network layer delivery and the transport layer Delivery.	Remember	8
7.	Find the class of the following IP addresses? a) 237.14.2.1 b) 208.35.54.12 c) 129.14.6.8 d) 114.34.2.8	Understand	7
8.	An IPV4 datagram arrives with fragmentation offset of 0 and an M bit (more fragment bit) of 0.Is this a first fragment middle fragment or last fragment Explain.	Remember	8
9.	A router with IPV4 address 123.45.21.12 and Ethernet physical address 23:45: BA: 00:67: CD has received a packet for a host destination with IP address 124.10.78.10.Show the entries in the ARP request packet sent by the router. Assume no sub-netting.	Understand	7
10.	Write the following MASKS in slash notation (/n). a) 255.0.0.0 b) 255.255.224.0 c) 255.255.255.0 d) 255.255.240.0	Remember	7

UNIT – IV

S. No	Questions	Blooms Taxonomy Level	Course Outcome
1.	Describe the role of the local name server and the authoritative name server in DNS.	Understand	9
2.	Discuss how the Simple Mail Transfer Protocol (SMTP) is useful in electronic mail.	Remember	10
3.	Explain the specific purposes of the DNS, HTTP, SMB, and SMTP/POP application layer protocols.	Understand	9
4.	Define Domain Name Service (DNS) and explain in detail about the domain hierarchy and name servers.	Remember	10
5.	Compare and contrast client/server with peer-to-peer data transfer over Networks.	Understand	9
6.	Describe in detail about the World Wide Web (WWW).	Remember	10
7.	Interpret the following sequences of characters (In hexa decimals) received by a TELNET client or server. a) FFFB01 b) FFFE01 c) FFF4 d) FFF9	Understand	10
8.	A client uses UDP to send data to a server. The data are 15 bytes. Calculate the efficiency of this transmission at the UDP level (ratio of useful bytes to total bytes).	Remember	9
9.	Determine the sequence of bits sent from a client TELNET for the binary transmission of 11110011 00111100 11111111	Understand	10
10.	Determine which of the following an FQDN is and which is a PQDN.	Remember	10

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