



**INSTITUTE OF AERONAUTICAL ENGINEERING**  
**(AUTONOMOUS)**  
Dundigal, Hyderabad - 500 043

**INFORMATION TECHNOLOGY**  
**ASSIGNMENT**

<b>Course Name</b>	<b>Computer Networks</b>
<b>Course Code</b>	A50515
<b>Class</b>	III B. Tech I Semester
<b>Branch</b>	Information technology
<b>Year</b>	2017 – 2018
<b>Course Faculty</b>	Mr N. Bhaswanth

**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**

<b>S. No</b>	<b>Questions</b>	<b>Blooms Taxonomy Level</b>	<b>Course Outcome</b>
<b>UNIT – I</b>			
1.	<b>List</b> two advantages of layering principle in computer networks?	Knowledge	2
2.	<b>Explain</b> the role of ARPANET in computer networks?	Knowledge	2
3.	<b>Distinguish</b> between baseband transmission and broadband transmission?	Understand	
4.	<b>Suggest</b> two points to improve the performance of network?	Understand	1
5.	<b>What</b> are the responsibilities of the data link layer in the Internet model?	Understand	2
6.	<b>Distinguish</b> between baseband transmission and broadband transmission?	Understand	2
7.	<b>What</b> is meant by topology and explain the topologies of the network?	Understand	2

S. No	Questions	Blooms Taxonomy Level	Course Outcome
8.	<b>Consider</b> an 1 km 10Mbps channel. What would be the utilization of this 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.	<b>Explain</b> 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
10.	<b>Why</b> sliding window flow control is considered to be more efficient than stop and wait flow control?	Understand	2
<b>UNIT- II</b>			
1.	<b>What</b> is vulnerable period? How it affects the performance in MAC protocols?	Understand	3
2.	<b>What</b> is the parameter 'a'? How does it affect the performance of the CSMA protocol?	Understand	3
3.	<b>How</b> throughput is improved in slotted ALOHA over pure ALOHA?	Understand	4
4.	<b>Distinguish</b> between FDMA and TDMA?	Understand	3
5.	<b>How</b> a Token Ring LAN does operate? Discuss. that can be used to set up wireless LAN's?	Understand	3
6.	<b>Name</b> the four basic network topologies and explain them giving all the Relevant features?	Understand	4
7.	<b>Explain</b> the frame format, operation and ring maintenance feature of IEEE 802.5 MAC protocol?	Understand	4
8.	<b>Assume</b> that a portion y of every transmitted packet is overhead (e.g., address, sync bits, etc.). 1. What will be the throughput delay characteristic of an FDMA channel? 2. What will be the throughput delay characteristic of a TDMA channel?	Understand	4
9.	<b>Compare</b> the first two moments of the distribution of the queueing time of FDMA with that of TDMA (Note: the queueing time does not include the actual transmission time)?	Understand	3
10.	<b>Derive</b> the steady-state distribution and the first two moments of the number of messages in a TDMA system where L (z) is the generating function of the number of packets in a message?	Understand	2
<b>UNIT - III</b>			
1.	<b>List</b> out network support layers and user support layers?	Knowledge	5
2.	<b>Explain</b> internet protocol with the neat block diagram of IP header?	Understand	5
3.	<b>Describe</b> two groups of multicast routing protocol?	Understand	5
4.	<b>Describe</b> the routing information protocol and distance vector routing protocol?	Understand	5

S. No	Questions	Blooms Taxonomy Level	Course Outcome
5.	<b>Define</b> BGP protocol. Describe its routing functionality in detail?	Knowledge	5
6.	<b>Explain</b> Distance Vector algorithm. Mention the limitation of Distance Vector routing algorithm?	understand	5
7.	<b>Compare</b> circuit switched, datagram and virtual circuit network	Understand	2
8.	<b>Write</b> short notes on a) X.25 b) ARP	Understand	3
9.	Show a routing table for a host that is connected to a LAN without being connected to internet? <b>Explain</b> ?	Understand	2
<b>UNIT - IV</b>			
1.	<b>Explain</b> the TCP Connection establishment and termination using Time-line diagram?	Understand	5
2.	<b>Illustrate</b> data units at different layers of the TCP / IP protocol suite?	Illustrate	5
3.	<b>Explain</b> how an application process running in one host is addressed by another process through TCP?	Understand	2
4.	<b>Differentiate</b> between network layer delivery and the transport layer delivery?	Understand	2
5.	<b>Describe</b> the three way handshake protocol to establish the transport level connection?	Understand	4
6.	<b>Discuss</b> about the TCP sliding window algorithm for flow control?	Understand	4
7.	<b>Find</b> 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	Knowledge	4
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 <b>Explain</b> ?	Understand	4
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. <b>Assume</b> no subnetting?	Understand	5
10.	<b>Write</b> 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	Understand	3
<b>UNIT - V</b>			
1.	<b>Describe</b> the role of the local name server and the authoritative name server in DNS?	Understand	5
2.	<b>Discuss</b> how the Simple Mail Transfer Protocol (SMTP) is useful in electronic mail?	Understand	5
3.	<b>Explain</b> the specific purposes of the DNS, HTTP, SMB, and SMTP/POP application layer protocols?	Understand	2
4.	<b>Define</b> Domain Name Service (DNS) and explain in detail about the domain hierarchy and name servers?	Knowledge	4

S. No	Questions	Blooms Taxonomy Level	Course Outcome
5.	<b>Compare</b> and contrast client/server with peer-to-peer data transfer over networks?	understand	4
6.	<b>Describe</b> in detail about the World Wide Web (WWW) ?	Understand	5
7.	<b>Interpret</b> the following sequences of characters (In Hexa decimals) received by a TELNET client or server? a) FFFB01 b) FFFE01 c) FFF4 d) FFF9	Knowledge	5
8.	A client uses UDP to send data to a server. The data are 15 bytes. <b>Calculate</b> the efficiency of this transmission at the UDP level (ratio of useful bytes to total bytes)?	Understand	5
9.	<b>Show</b> the sequence of bits sent from a client TELNET for the binary transmission of 11110011 00111100 11111111	Understand	5
10.	<b>Determine</b> which of the following is an FQDN and which is a PQDN? a) mil b) edu c) xxx.yyy.net d) zzz.yyy.xxx.edu	Understand	5

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