INSTITUTE OF AERONAUTICAL ENGINEERING

(Autonomous)
Dundigal, Hyderabad - 500 043

ELECTRONICS AND COMMUNICATION ENGINEERING

TUTORIAL QUESTION BANK

Course Title	**COMPUTER NETWORKS**				
Course Code	AIT003				
Programme	B.Tech				
Semester	VIII				
Course Type	Core				
Regulation	IARE - R16				
Course Structure	**Theory**			**Practical**	
	Lectures	**Tutorials**	**Credits**	**Laboratory**	**Credits**
	3	1	3	-	-
Chief Coordinator	Mr. G Kiarn Kumar, Assistant Professor				
Course Faculty	Mr. B Santhosh Kumar, Assistant Professor				

COURSE OBJECTIVES

The course should enable the students to:	
I	Recognize modern network architectures from a design and performance perspective.
II	Understand the basics and challenges of network communication.
III	Provide an opportunity to do network programming using TCP/IP.
IV	Interpret the operation of the protocols that are used inside the Internet.

COURSE OUTCOMES (COs):

CO 1	Describe the functions of each layer in OSI and TCP/IP model.
CO 2	Describe the Session layer design issues and Transport layer services.
CO 3	Classify the routing protocols and analyze how to assign the IP addresses for the given network.
CO 4	Explain the types of transmission media with real time applications
CO 5	Acquire knowledge of Application layer and Presentation layer paradigms and protocols.

COURSE LEARNING OUTCOMES (CLOs):

Students, who complete the course, will have demonstrated the ability to do the following:

AIT003.01	Understand the importance of data networks and the Internet in supporting business communications and everyday activities.
AIT003.02	Classify different network topologies, LANs, WANs, internetworks and models such as Open System Interconnect (OSI), TCP/IP.
AIT003.03	Understand the significance and purpose of protocols, standards and their key elements use in data communications and networking.
AIT003.04	Describe the relationship between data and signals, their types, behavior, properties, characterization and transmission in the physical layer.
AIT003.05	Understand the basic concepts of data communications including the key aspects of networking and their interrelationship, packet switching, circuit switching as internal external operations, physical structures, types, models and internetworking.
AIT003.06	Understand the concept, advantages, analysis of cyclic codes including their algebraic representation and explain the design, implementation, performance of cyclic redundancy check, checksum.
AIT003.07	Understand the basic difference between data logical link control, media access control and discuss logical link control with reference to framing, flow and error control.
AIT003.08	Describe the reliable inter-node transmission of frames and discuss the ability to compare and contrast high-level data link control protocol and point-to-point protocol (HDLC, PPP).
AIT003.09	Understand connecting LAN's, backbone networks, and virtual LAN's and operations of bridges, spanning tree algorithm in networks.
AIT003.10	Explain the role of data link layer protocols in data transmission and the preparation method of data for transmission on network media.
AIT003.11	Understand routing principles and algorithms such as distance vector and link state and usage of the routing protocols on the Internet such as RIP, OSPF, and BGP.
AIT003.12	Understand internetworking principles and the operation of Internet protocols IP, IPv4, IPv6 and ICMP.
AIT003.13	Explain and demonstrate the mechanics associated with IP addressing, device interface, association between physical and logical addressing.
AIT003.14	Understand the concepts of transport service, elements of transport protocol and congestion control in the computer networks.
AIT003.15	Describe the utilization of transport layer protocols in the control congestion on the Internet.
AIT003.16	Analyze the correct transport layer protocol, such as TCP and UDP to transfer data segments in the networks.
AIT003.17	Describe the SCTP, RTP protocols and analyze the applications based on these protocols, network activity at the transport layer.
AIT003.18	Analyze the operations and features of common application layer protocols such as Hyper Text Transfer protocol (HTTP), File transfer Protocol (FTP.)
AIT003.19	Describe the operations and features of common application layer protocols such as Dynamic Host Configuration Protocol (DHCP), Simple Network Management Protocol (SNMP).
AIT003.20	Describe SSH-based applications, socket programming and its role in application processing.
AIT003.21	Analyze the process of map hostnames to IP addresses using Domain Naming System (DNS) protocol.
AIT003.22	Understand the concepts of E-mail, telnet, secure shell in computer networks.
AIT003.23	Possess the Remember and skills for employability and to succeed in national and International level competitive examinations.
AIT003.24	Possess the Remember and skills currently use in the Internet work and the requirements for designing network protocols.

TUTORIAL QUESTION BANK

S.No	QUESTION	Blooms Taxonomy Level	Course Outcomes	Course Learning Outcomes
UNIT-I INTRODUCTION TO PHYSICAL LAYER				
Part - A(Short Answer Questions)				
1	State two disadvantages of twisted pair cables.	Understand	CO 1	AIT003.01
2	Define packet switching?	Understand	CO 1	AIT003.01
3	Define Data rate?	Understand	CO 1	AIT003.01
4	List two advantages and two disadvantages of bus topology in network.	Remember	CO 1	AIT003.01
5	State Nyquist Bit Rate?	Understand	CO 1	AIT003.02
6	List two advantages of layering principle in computer networks?	Remember	CO 1	AIT003.02
7	Explain the role of ARPANET in computer networks?	Understand	CO 1	AIT003.02
8	Distinguish between baseband transmission and broadband transmission?	Remember	CO 1	AIT003.02
9	Define network.	Remember	CO 1	AIT003.02
10	List different types of networks?	Understand	CO 1	AIT003.03
11	Discuss why are protocols needed?	Remember	CO 1	AIT003.03
12	Discuss two points to improve the performance of network?	Understand	CO 1	AIT003.04
13	What is meant by topology? Name some popular topologies?	Understand	CO 1	AIT003.05
14	Define switching?	Understand	CO 1	AIT003.04
15	Describe Why are standards needed?	Understand	CO 1	AIT003.02
16	Write the importance about MAN?	Understand	CO 1	AIT003.04
17	Describe the Noise?	Understand	CO 1	AIT003.04
18	Write a short note on WAN?	Understand	CO 1	AIT003.05
19	List the Transmission Impairments?	Remember	CO 1	AIT003.05
20	Discuss on Distortion?	Understand	CO 1	AIT003.03
Part - B (Long Answer Questions)				
1	Describe TCP/IP Model? Explain the functions and protocols	Understand	CO 1	AIT003.01
2	Distinguish the OSI and TCP/IP Reference Models	Remember	CO 1	AIT003.01
3	Define computer networks? Describe various types of networks topologies in computer network. Also discuss various advantages and disadvantages of each topology.	Understand	CO 1	AIT003.01
4	Define switching? Explain circuit switching?	Remember	CO 1	AIT003.01
5	Give detailed note on three types of transmission impairment?	Understand	CO 1	AIT003.02
6	Distinguish between baseband transmission and broadband transmission?	Understand	CO 1	AIT003.02
7	Define switching? Explain packet switching?	Understand	CO 1	AIT003.02
8	With a neat sketch explain ISO/OSI reference model?	Understand	CO 1	AIT003.02
9	Define topology and explain the various topologies of the network?	Understand	CO 1	AIT003.02
10	Discuss and compare various types of networks.	Remember	CO 1	AIT003.03
11	List out and explain are the applications of Computer Networks?	Understand	CO 1	AIT003.03
12	Define OSI Model? Explain the functions and protocols and services of each layer?	Understand	CO 1	AIT003.04
13	Explain the following:- a)LAN b)MAN c)WAN d)ARPANET	Understand	CO 1	AIT003.05
14	Explain how are OSI and ISO related to each other?	Remember	CO 1	AIT003.04
15	Illustrate some of the factors that determine whether a unification system is a	Understand	CO 1	AIT003.01
16	Differentiate four basic topologies? With diagrams.	Understand	CO 1	AIT003.01
17	Explain Shannon Capacity with example	Understand	CO 1	AIT003.01
18	Explain Nyquist Bit Rate with example?	Understand	CO 1	AIT003.01
19	Define Bit Rate and explain factors effects the bit rate?	Understand	CO 1	AIT003.02

S.No	QUESTION	Blooms Taxonomy Level	Course Outcomes	Course Learning Outcomes
20	List the layers of the TCP/IP reference model with neat explanation.	Understand	CO 1	AIT003.02
	Part - C (Analytical Questions)			
1	Calculate the maximum bit rate? Consider a noiseless channel with a bandwidth of 3000 Hz transmitting a signal with two signal levels.	Understand	CO 1	AIT003.01
2	Imagine a signal travels through a transmission medium and its power is reduced to half. This means p2 = (1/2) p1. Calculate Attenuation.	Understand	CO 1	AIT003.03
3	Consider a telephone line normally has a bandwidth of 3000 Hz (300 to 3300 Hz) assigned for data communications. The signal-to-noise ratio is usually 3162. Calculate the channel capacity for this channel?	Remember	CO 1	AIT003.03
4	Consider the difference between circuit switching and packet switching. Assume the link's rate is 2 Mbps and users are generating data at a rate of 100 Kbps when busy. Users are busy only %1 of time. What is the maximum number of users that a circuit switching architecture can support simultaneously?	Understand	CO 1	AIT003.04
5	A network with bandwidth of 10 Mbps can pass only an average of 12,000 frames per minute with each frame carrying an average of 10,000 bits. What is the throughput of this network?	Understand	CO 1	AIT003.05
6	For a wavelength in vacuum of 1550 nm, the corresponding frequency is f= c/λ = (3 * 108)/(1550*10-9) =193.4 * 1012 = 193.4 THz. for a typical single mode fiber, the velocity of propagation is approximately v = 2.04 *108 . Find out Wavelength of the Fiber optic cable.	Understand	CO 1	AIT003.04
7	Calculate the total time required to transfer a 1.5MB file in the following cases, assuming a RTT of 80 ms, a packet size of 1 KB data, and an initial 2×RTT of hand shaking" before data is Sent. The bandwidth is 10Mbps	Understand	CO 1	AIT003.03
8	Consider a point-to-point link 50 km in length. At what bandwidth would propagation delay (at a speed of 2 × 108 m/sec) equal transmit delay for 100 - byte packets? What about 512-byte packets?	Remember	CO 1	AIT003.03
9	Suppose you are designing a sliding window protocol for a 1-Mbps point to-point link to the stationary satellite evolving around Earth at 3 × 104 km altitude. Assuming g that each frame carries 1 KB of data, what is the minimum number of bits you need for the sequence number in the following cases? Assume the speed of light is 3×108 meters per second. (a)RWS=1. (b) RWS=SWS.	Understand	CO 1	AIT003.04
10	Imagine a signal travels through a transmission medium and its power is reduced to half. This means p2 = (1/2) p1. Calculate Attenuation.	Understand	CO 1	AIT003.03
	UNIT-II **INTRODUCTION TO DATA LINK LAYER**			
	Part – A (Short Answer Questions)			
1	What is redundancy?	Remember	CO 2	AIT003.06
2	What is vulnerable period?	Understand	CO 2	AIT003.06
3	List three categories of multiple access protocols?	Understand	CO 2	AIT003.06
4	Define CSMA and CDMA?	Understand	CO 2	AIT003.07
5	List out the available error detection methods.	Understand	CO 2	AIT003.07
6	What is an exponential back off?	Understand	CO 2	AIT003.05
7	What are the responsibilities of data link layer?	Remember	CO 2	AIT003.06

S.No	QUESTION	Blooms Taxonomy Level	Course Outcomes	Course Learning Outcomes
8	Mention the types of errors.	Understand	CO 2	AIT003.06
9	Define bridge?	Understand	CO 2	AIT003.07
10	Write a short note on Hub?	Remember	CO 2	AIT003.06
11	Describe the functionalities of router?	Understand	CO 2	AIT003.08
12	Define ALOHA?	Understand	CO 2	AIT003.08
13	Describe checksum?	Understand	CO 2	AIT003.08
14	What is HDLC?	Understand	CO 2	AIT003.07
15	Explain VLAN?	Understand	CO 2	AIT003.09
16	Write short notes on CRC generator	Understand	CO 2	AIT003.05
17	How performance is improved in CSMA/CD protocol compared to CSMA protocol?	Understand	CO 2	AIT003.09
18	Give data transfer modes of HDLC?	Understand	CO 2	AIT003.06
19	What is vulnerable time?	Understand	CO 2	AIT003.07
20	Distinguish between FDMA and TDMA?	Understand	CO 2	AIT003.06
Part - B (Long Answer Questions)				
1	Compare and contrast Go back N and selective Repeat	Understand	CO 2	AIT003.06
2	List and briefly discuss the two different basic transmission technologies.	Understand	CO 2	AIT003.06
3	How many types of frames HDLC uses? Explain briefly?	Understand	CO 2	AIT003.06
4	What is pure ALOHA and slotted ALOHA? Consider the delay of both at low load. Which one is less? Explain your answer.	Remember	CO 2	AIT003.07
5	Explain the working of carrier sense multiple access protocol?	Remember	CO 2	AIT003.07
6	Describe the back-off time of PURE ALOHA protocol?	Understand	CO 2	AIT003.05
7	Explain in details the types of bridges.	Remember	CO 2	AIT003.06
8	State and explain the functions of MAC.	Understand	CO 2	AIT003.06
9	How performance is improved in CSMA/CD protocol compared to CSMA	Understand	CO 2	AIT003.07
10	How CSMA/CA differs from CSMA/CD. Explain in brief?	Remember	CO 2	AIT003.06
11	What is the purpose of the timer at the sender site in systems using	Understand	CO 2	AIT003.08
12	Explain Error Control & Flow Control.	Understand	CO 2	AIT003.06
13	Why collision is an issue in a random access protocol but not in controlled access or channelizing protocols?	Understand	CO 2	AIT003.06
14	Compare and contrast a controlled access protocol with a channelizing protocol.	Understand	CO 2	AIT003.06
15	Do we need a multiple access protocol when we use the local loop of the telephone company to access the internet? Explain.	Understand	CO 2	AIT003.06
16	Write short notes on CRC.	Understand	CO 2	AIT003.06
17	What are the steps followed in checksum generator?	Understand	CO 2	AIT003.07
18	Define parameter ‘a’? How does it affect the performance of the CSMA	Understand	CO 2	AIT003.07
19	Explain Virtual Local Area Network explain it?	Understand	CO 2	AIT003.05
20	Define ALOHA? What are the different types of ALOHA	Understand	CO 2	AIT003.06
Part - C (Analytical Questions)				
1	Derive the Laplace transform of the message delay in FDMA in which every message contains a random number of packets. Compare the expected message delay with that of TDMA?	Understand	CO 2	AIT003.06
2	A network with one primary and four secondary stations uses polling. The size of a data frame is 1000 bytes. The size of the poll, ACK and NAK frames are 32 bytes each. Each station has 5 frames to send. How many total bytes are exchanged if there is no limitation on the number of frames a station can send in response to a poll?	Remember	CO 2	AIT003.06
3	Find CRC for P = 110011 and M = 1100011?	Understand	CO 2	AIT003.06
4	One hundred stations on a pure ALOHA network share a 1-	Remember	CO 2	AIT003.07

S.No	QUESTION	Blooms Taxonomy Level	Course Outcomes	Course Learning Outcomes
	Mbps channel. If frames are 1000 bits long, find the throughput if each station is sending 10 frames/sec?			
5	Calculate the hamming distance for each of the following code words? i. d(10000,01000) ii. d(10101, 10010) iii. d(1111,1111) iv. d(0000,0000)	Understand	CO 2	AIT003.06
UNIT-III THE NETWORK LAYER				
Part - A (Short Answer Questions)				
1	State quality of service?	Remember	CO 3	AIT003.09
2	List the classifications of the adaptive algorithms?	Remember	CO 3	AIT003.09
3	List the classifications of the non-adaptive algorithms?	Understand	CO 3	AIT003.09
4	Write the keys for understanding the distance vector routing.	Understand	CO 3	AIT003.09
5	Define Flooding?	Understand	CO 3	AIT003.09
6	What is meant by routing algorithm?	Remember	CO 3	AIT003.09
7	Give a note on optimality principle?	Understand	CO 3	AIT003.09
8	Define Adaptive routing algorithms?	Understand	CO 3	AIT003.10
9	Define Non-Adaptive routing algorithms?	Remember	CO 3	AIT003.10
10	What is congestion control?	Remember	CO 3	AIT003.10
CIE-II				
1	Define Traffic shaping?	Understand	CO 3	AIT003.11
2	State on Leaky bucket algorithm?	Remember	CO 3	AIT003.11
3	Define Load shedding?	Understand	CO 3	AIT003.11
4	What are thedesign issues of network layer?	Understand	CO 3	AIT003.11
5	List network support layers and the user support layers?	Remember	CO 3	AIT003.11
6	State store and forward?	Understand	CO 3	AIT003.11
7	Illustrate shortest path?	Remember	CO 3	AIT003.12
8	Write the keys for understanding the link state routing.	Understand	CO 3	AIT003.12
9	List the requirements of the routing algorithms?	Understand	CO 3	AIT003.11
10	List the three variant s of the internetworking?	Understand	CO 3	AIT003.11
Part - B (Long Answer Questions)				
1	How the routers get the information about neighbor?	Understand	CO 3	AIT003.09
2	How the packet cost referred in distance vector and link state routing?	Remember	CO 3	AIT003.09
3	Describe the Routing Information protocol and Distance vector routing.	Understand	CO 3	AIT003.10
4	Explain Leaky bucket algorithm?	Understand	CO 3	AIT003.09
5	Describe the Traffic Shaping?	Understand	CO 3	AIT003.10
6	Explain in detail about non-adaptive algorithms?	Understand	CO 3	AIT003.10
7	Describe the Flooding algorithms?	Remember	CO 3	AIT003.09
8	List the fields of an IPv4 datagram header that participate in fragmentation and reassembly.	Understand	CO 3	AIT003.09
9	Explain the link state routing algorithm with an example?	Understand	CO 3	AIT003.10
10	State the major difference between Distance Vector Routing and Link state	Understand	CO 3	AIT003.09
CIE-II				
1	Describe the various congestion control mechanism in detail?	Understand	CO 3	AIT003.11
2	Explain Internet Protocol with the neat block diagram of IP	Understand	CO 3	AIT003.11

S.No	QUESTION	Blooms Taxonomy Level	Course Outcomes	Course Learning Outcomes
	header format?			
3	List and explain the features of the IPv6 Protocol?	Understand	CO 3	AIT003.12
4	Explain the IP packet format with neat diagram?	Remember	CO 3	AIT003.12
5	Describe the IPv6 packet format?	Understand	CO 3	AIT003.11
6	Explain the datagram delivery and forwarding in internet protocol?	Understand	CO 3	AIT003.11
7	Find the class of each IP address. Give suitable explanation. i) 227.12.14.87 ii) 193.14.56.22 iii) 14.23.120.8 iv) 252.5.15.111 v) 134.11.78.56 vi) 172.18.58.1	Understand	CO 3	AIT003.12
8	Explain ICMPv6 protocol?	Understand	CO 3	AIT003.12
9	Explain about Internet Control Message Protocol?	Understand	CO 3	AIT003.12
10	Define BGP Protocol. Describe its routing functionality in detail?	Understand	CO 3	AIT003.12
	Part - C (Analytical Questions)			
1	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	Understand	CO 3	AIT003.12
2	Why are we running out of IPv4 addresses? How does IPv6 solve this problem?	Remember	CO 3	AIT003.13
3	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	CO 3	AIT003.13
	CIE-II			
4	Design the autonomous system with the following specifications : a. There are 8 networks (N1 toN8) b. There are8routers (R1 toR8) c. N1,N2,N3,N4,N5 and N6 are Ethernet LANs	Understand	CO 3	AIT003.12
5	Consider a host using leaky bucket strategy for traffic shaping. The host sends a burst data at a rate of 15Mbps for first 3 seconds and remains silent for 2 seconds. Then again a burst data at a rate of 6 Mbps is send for next 2 seconds and then the host remains silent for next 2 seconds. Now again the host sends data at rate of 5 Mbps for next 3 seconds. What will be the output data rate of the leaky bucket?	Remember	CO 3	AIT003.11
6	Design the autonomous system with the following specifications : N7 and N8 are point to point WANs a. R1 connects N1 andN2 b. R2 connects N1 andN7 c. R3 connects N2 andN8	Understand	CO 3	AIT003.12
	UNIT-IV THE TRANSPORT LAYER			
	Part - A (Short Answer Questions)			
1	List out functions of transport layer?	Understand	CO 4	AIT003.14
2	Define Multi-protocol router?	Understand	CO 4	AIT003.14
3	List out duties of the transport layer?	Understand	CO 4	AIT003.16
4	Define TCP? Or Reliable byte stream	Understand	CO 4	AIT003.16
5	Differentiate between network layer delivery and the	Remember	CO 4	AIT003.16
6	What are the different fields in pseudo header?	Understand	CO 4	AIT003.18
7	Define quality of service?	Understand	CO 4	AIT003.17

S.No	QUESTION	Blooms Taxonomy Level	Course Outcomes	Course Learning Outcomes
8	Explain the main idea of UDP? Or Simple De multiplexer	Understand	CO 4	AIT003.18
9	List the timers used by TCP.	Understand	CO 4	AIT003.17
10	How an application process running in one host is addressed by another process through TCP?	Remember	CO 4	AIT003.19
11	Describe datagram format of UDP?	Understand	CO 4	AIT003.19
12	What is traffic shaping?	Understand	CO 4	AIT003.20
13	State two protocols available at transport layer?	Understand	CO 4	AIT003.20
14	List out various congestion avoidance techniques?	Understand	CO 4	AIT003.20
15	Distinguish between contention and congestion?	Understand	CO 4	AIT003.18
16	Define tunneling?	Understand	CO 4	AIT003.18
17	State the four major aspects of reliable delivery at the	Understand	CO 4	AIT003.17
18	How check sum is calculated in TCP?	Understand	CO 4	AIT003.18
19	What is CODE BITS in TCP header?	Understand	CO 4	AIT003.17
20	State the use of SYN and FIN bits in TCP?	Understand	CO 4	AIT003.19
Part – B (Long Answer Questions)				
1	Explain the real transport protocol of UDP and how will you calculate checksum in UDP.	Understand	CO 4	AIT003.18
2	Draw neatly the TCP segment format and describe each of it.	Understand	CO 4	AIT003.17
3	List out the network performance characteristics.	Understand	CO 4	AIT003.18
4	Describe the adaptive retransmission policy in detail.	Understand	CO 4	AIT003.17
5	Explain the TCP connection establishment and termination.	Remember	CO 4	AIT003.19
6	Describe the three way handshake protocol to establish the transport level connection.	Understand	CO 4	AIT003.19
7	Draw TCP state transition diagram and describe each of it.	Understand	CO 4	AIT003.20
8	Give a detailed note on connection establishment?	Remember	CO 4	AIT003.20
9	Discuss about the TCP sliding window algorithm for flow	Understand	CO 4	AIT003.20
10	Write congestion control algorithms and describe how it works.	Understand	CO 4	AIT003.18
11	Explain leaky bucket and token bucket algorithm.	Understand	CO 4	AIT003.18
12	Distinguish UDP &TCP with suitable example?	Understand	CO 4	AIT003.18
13	Describe congestion avoidance techniques in detail?	Understand	CO 4	AIT003.17
14	List major types of networks and give brief note on each of it.	Understand	CO 4	AIT003.18
15	Illustrate data units at different layers of the TCP / IP protocol suite?	Understand	CO 4	AIT003.17
16	What is the difference between TCP and UDP?	Understand	CO 4	AIT003.19
17	Draw UDP header format with an example.	Understand	CO 4	AIT003.19
18	Explain transport layer services and its applications.	Understand	CO 4	AIT003.20
19	Explain the method congestion? Write a note on how to control congestion?	Understand	CO 4	AIT003.20
20	What is multiplexing? Explain with diagram	Understand	CO 4	AIT003.20
Part - C (Analytical Questions)				
1	An end system sends 50 packets for second using UDP over a full duplex mode 100 Mbps Ethernet LAN Connection. Each packet consists of 1500 Bytes of the Ethernet frame payload data. What is the throughput when measured at UDP protocol?	Understand	CO 4	AIT003.18
2	Assume each packet has typical TCP and IP headers each 20bytes long. If we have three computers, A, B and C. The link between A and B has an MTU of 3000 bytes, while the link between B and C has an MTU of 1000 bytes. Consider the case where a packet needs to be sent from A to C that has a size of 3000 bytes (including headers). How many fragments will we have from B to C, and how much data will be in each fragment (i.e. excluding headers)? (all connections are assumed to be Ethernet)	Understand	CO 4	AIT003.17
3	A TCP connection is using a window size of 12000 bytes and	Understand	CO 4	AIT003.18

S.No	QUESTION	Blooms Taxonomy Level	Course Outcomes	Course Learning Outcomes
	the previous acknowledgement number was 22001.It receives a segment with acknowledgment number 24001 and window size advertisement of 12000. Design a diagram to show the situation of the window before and after?			
4	A client uses UDP to send data to a server. The data are 15bytes. Calculate the efficiency of this transmission at the UDP level (ratio of useful bytes to total bytes)?	Understand	CO 4	AIT003.18
UNIT-V INTRODUCTION TO APPLICATION LAYERL				
Part - A (Short Answer Questions)				
1	Explain Internet Transport Protocols?	Understand	CO 5	AIT003.21
2	What is the purpose of Domain Name System?	Remember	CO 5	AIT003.22
3	State advantages of stateless server of HTTP?	Understand	CO 5	AIT003.22
4	Define message Formatting?	Understand	CO 5	AIT003.21
5	Discuss the three main division of the domain name space.	Remember	CO 5	AIT003.21
6	Differentiate between FTP & HTTP?	Remember	CO 5	AIT003.23
7	Discuss the basic model of FTP.	Understand	CO 5	AIT003.23
8	Explain the need of Uniform Resource Locator inWWW.	Understand	CO 5	AIT003.21
9	List two applications of Application Layer?	Remember	CO 5	AIT003.24
10	Explain DNS Name Space?	Remember	CO 5	AIT003.23
11	List the advantages of Email?	Understand	CO 5	AIT003.23
12	Define SNMP?	Understand	CO 5	AIT003.22
13	Explain the concept of Telnet?	Remember	CO 5	AIT003.21
14	Define FTP?	Remember	CO 5	AIT003.22
15	Explain MIME?	Understand	CO 5	AIT003.22
16	Illustrate the use of MIME Extension?	Understand	CO 5	AIT003.21
17	Explain WWW?	Understand	CO 5	AIT003.21
18	Define Lossy Compression and Lossless Compression?	Understand	CO 5	AIT003.23
19	What are the applications of WWW	Understand	CO 5	AIT003.23
20	Define domain name server.	Understand	CO 5	AIT003.23
Part - B (Long Answer Questions)				
1	What are the duties of FTP protocol?	Understand	CO 5	AIT003.21
2	Define two methods of HTTP?	Understand	CO 5	AIT003.22
3	Define Big-endian format and little-endian format?	Understand	CO 5	AIT003.22
4	Describe the role of the local name server and the authoritative name server in DNS?	Understand	CO 5	AIT003.21
5	Define Domain Name Service (DNS) and explain in detail about	Remember	CO 5	AIT003.21
6	Explain in detail about the working principles of Simple	Understand	CO 5	AIT003.23
7	What is HTTP protocol used for? What is the default port number of HTTP protocol?	Understand	CO 5	AIT003.23
8	Describe in detail about the World Wide Web (WWW)?	Remember	CO 5	AIT003.21
9	Explain the working principle of FTP in detail with neat	Understand	CO 5	AIT003.24
10	Explain the WWW in detail?	Understand	CO 5	AIT003.23
11	Differentiate between ARP and RARP?	Understand	CO 5	AIT003.23
12	Explain the specific purposes of the DNS, HTTP application layer protocols?	Understand	CO 5	AIT003.22
13	Compare and contrast client/server with peer-to-peer data	Understand	CO 5	AIT003.21
14	Compare and contrast client/server with peer-to-peer data transfer over networks.	Understand	CO 5	AIT003.22
15	Differentiate between ARP and RARP.	Understand	CO 5	AIT003.22
16	Define two methods of HTTP.	Understand	CO 5	AIT003.21
17	Describe the role of the local name server and the authoritative	Understand	CO 5	AIT003.21

S.No	QUESTION	Blooms Taxonomy Level	Course Outcomes	Course Learning Outcomes
	name server in DNS.			
18	What is HTTP protocol used for? What is the default port number of HTTP protocol?	Understand	CO 5	AIT003.21
19	Explain email, telenet, source shell in detail.	Understand	CO 5	AIT003.22
20	Explain simple network management protocol.	Understand	CO 5	AIT003.22
	Part - C (Analytical Questions)			
1	Determine which of the following an FQDN is and which is a PQDN? a) Mil b) Edu c) xxx.yyy.net	Understand	CO 5	AIT003.21
2	Discuss the TCP connection needed in the FTP?	Understand	CO 5	AIT003.22
3	Determine 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	Remember	CO 5	AIT003.22
4	Interpret the following sequences of characters (In Hexadecimals) received by a TELNET client or server? a. FFFB01 b. FFFE01 c. FFF4 d. FFF9	Understand	CO 5	AIT003.21
5	Show the sequence of bits sent from a client TELNET for the binary transmission of 11110011 00111100 11111111	Understand	CO 5	AIT003.23

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