GURU NANAK INSTITUTE OF TECHNOLOGY

An Autonomous Institute under MAKAUT

2020-2021

Computer Networking

CS(EI)714A

TIME ALLOTTED: 3 HOURS **FULL MARKS: 70**

The figures in the margin indicate full marks.

Candidates are required to give their answers in their own words as far as practicable

GROUP – A

(Multiple Choice Type Questions)

Answer any ***ten*** from the following, choosing the correct alternative of each question: **10×1=10**

			Marks	CO No
1.	(i)	In which layer signal are distorted (a) Network Layer (b) Transport layer (c) Session layer (d) None of these.	1	CO1
	(ii)	How many bits in Ipv6 address 3 (a) 46 bits in hex (b) 48 bit in binary (c) 48 bit in hex (d) 128 bit in binary	1	CO2
	(iii)	BNC connector is related with (a) twisted-pair cable (b) Fiber optical cable (c) co-axial cable (d) None of these	1	CO1
	(iv)	If the block of address is referred as 10.03.20.128/24 Then what is the last address in this block (a) 10.03.20.128 (b) 10.03.20.0 (c) 10.03.20.1 (d) none of these	1	CO3
	(v)	Which of the following are transport layer protocols used in networking? (a) TCP and FTP (b) UDP and HTTP (c) TCP and UDP (d) HTTP and FTP	1	CO5
	(vi)	An endpoint of an inter-process communication flow across a computer network is called _____ (a) Socket (b) port (c) pipe (d) machine	1	CO2

(vii)	A _____ is a TCP name for a transport service access point. (a) Port (b) Pipe (c) Node (d) protocol	1	CO3
(viii)	The network layer is concerned with _____ of data. a) bits b) frames c) packets d) bytes	1	CO4
(ix)	Link control protocol and Network control protocol is a feature of (a) Peer-to-Peer protocol (b) Point-to-Point protocol (c) MAC Protocol (d) HDLC protocol	1	CO2
(x)	A tree topology is a variation of a …….. topology (a) Mesh (b) Star (c) Manchestar (d) Unipolar	1	CO1
(xi)	Interconnected networks need communication processors such as switches, routers, hubs, and gateways. Select the best option: (a) TCP/IP (b) Protocol (c) Open systems (d) internetwork processor	1	CO1
(xii)	When the useful bandwidth of transmission medium exceeds the required bandwidth of signals to be transmitted the following technique is used (a) FDM (b) FDMA (c) TDMA (d) TDM	1	CO1

GROUP – B
(Short Answer Type Questions)

(Answer any *three* of the following) **3 x 5 = 15**

			Marks	CO No
2.	(a)	Define Mobile IP	1	CO3
	(b)	What are the components associated with Mobile IP? Show working of Mobile IP with diagram.	2	CO5
	(c)	Show working of Mobile IP with diagram.	2	CO1
3.		Assume the dataword is **1001** and divisor is **1011**, now form the codeword using CRC encoder/generator method.	5	CO2
4.	(a)	What is access control mechanism?	2	CO2
	(b)	What are the vulnerable time and throughput of Pure ALOHA and Slotted ALOHA	3	CO2

5.		What is congestion control mechanism? How it is controlled. Write one or two sentences.	5	CO5
6.	(a)	What is access control mechanism?	2	CO2
	(b)	What are the vulnerable time and throughput of Pure ALOHA and Slotted ALOHA	3	CO2

GROUP – C
(Short Answer Type Questions)

(Answer any *three* of the following) **3 x 15 = 45**

			Marks	**CO No**
7.	(a)	Write down UDP segment format and explain differences between TCP with UDP.	6	CO4
	(b)	How error control can be done in UDP? Explain	4	CO4
	(c)	Explain the handshaking procedure in TCP protocol	5	CO4
8.	(a)	What are persistence strategies?	6	CO2
	(b)	Explain the HDLC frame format?	7	CO2
	(c)	Write down the examples of bit-oriented and character oriented protocol?	2	CO2
9.	(a)	What is sliding window protocol? Why the name of flow control mechanism is Go-Back-N?	5	CO2
	(b)	Why the sender sliding window size is less than 2^m where m is the number of bits in a frame of Go-Back-N?	4	CO2
	(c)	What happened if frame is lost and ack is lost in stop and wait ARQ mechanism? What is Piggybacking?	6	CO2
10.	(a)	Write down the algorithms associated with digital signature in cryptography.	6	CO3
	(b)	Mention the steps followed in creating digital signature.	5	CO4
	(c)	Compare digital signature and certificate in cryptography.	4	CO2
11		Write short notes on (Any three)	3x5=15	
	(a)	Electronic-Mail	5	CO2
	(b)	DHCP	5	CO2
	(c)	WAN	5	CO4
	(d)	SNMP	5	CO3
	(e)	DNS	5	CO3