GURU NANAK INSTITUTE OF TECHNOLOGY

An Autonomous Institute under MAKAUT

2022

COMPUTER NETWORKING

IT603

TIME ALLOTTED: 3HR **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)	When data and acknowledgement are sent on the same frame, this is called_____ a) Piggybacking b) Backpacking c) Piggypacking d) None of these	1	CO3
ii)	While transmitting odd-parity coded symbols, the number of 1's in each symbol is a) Odd b) Even c) a and b both d) Unknown	1	CO2
iii)	The _____ field is used to order packets of a message. a) Urgent pointer b) Checksum c) Sequence number d) Acknowledgement number	1	CO3
iv)	A Bluetooth frame needs _____ μs for hopping and control mechanism a) 625 b) 259 c) 3 d) A multiple of 259	1	CO4
v)	_____ is a error correction mechanism a) Piggybacking b) Hamming Code c) CRC d) Stop and Wait	1	CO3

vi) The 32-bit Internet address 10000000 000010100 0000010 00011110 will be written in dotted decimal notation as.....
a) 148.20.2.30
b) 164.100.9.61
c) 210.20.2.64
d) 128.10.2.30
1 CO1

vii) Sliding window protocol is technique used for
a) Error Control
b) Session Control
c) Flow Control
d) Concurrency Control
1 CO2

viii) In _____ there is no setup and teardown phase
a) Circuit Switching
b) Virtual Circuit Switching
c) Datagram Switching
d) None of these
1 CO5

ix) Which among the following represents the objectives/requirements of Data Link Layer?
a) Both Error Control and Flow Control
b) Error Control
c) Flow Control
d) None of the above
1 CO3

x) User datagram protocol is called connectionless because
a) all UDP packets are treated independently by transport layer
b) it sends data as a stream of related packets
c) it is received in the same order as sent order
d) none of the mentioned
1 CO2

xi) DHCP Server provides _____ to the client.
a) Protocol
b) IP Address
c) MAC Address
d) Network Address
1 CO1

GROUP – B
(Short Answer Type Questions)

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

			Marks	CO No
2.		Explain CSMA/CD technique.	5	CO2
3.	a)	What are the responsibilities of Network Layer?	2	CO1
	b)	A bit string 0111101111101111110, needs to be transmitted at the data link layer. What is the string actually transmitted after bit stuffing and why?	3	CO5
4.	a)	An organization granted a block of classless address with the starting address 199.34.76.128/29. How many addresses are granted? What will be the last address of the block?	4	CO3

			Marks	CO No
	b)	What is the difference between connection-less and connection-oriented protocols?	1	CO1
5.	a)	For seven devices in a network, what is the number of cable links required for a mesh, bus, ring and star topology?	2	CO4
	b)	What is token Ring?	3	CO1
6		Describe Two-Dimensional Parity Checker.	5	CO2

GROUP – C
(Long Answer Type Questions)

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

			Marks	CO No
7.	a)	Dataword: 100100, Divisor: 1101. What will be the codeword? How to check if there is some error or not?	8	CO1
	b)	What are the transmission impairments in data communication?	5	CO3
	c)	Draw the line coding using Manchester encoding and AMI for a bit pattern 1110011.	2	CO2
8.	a)	In Go back 4, if every 6th packet that is being transmitted is lost and if total number of packets to be sent is 10, then how many transmissions will be required?	5	CO4
	b)	An ISP is granted a block of addresses starting with 190.100.0.0/16 (65,536 addresses). The ISP needs to distribute these addresses to three groups of customers as follows: i. The first group has 64 customers; each needs 256 addresses. ii. The second group has 128 customers; each needs 128 addresses. iii. The third group has 128 customers; each needs 64 addresses. Design the subblocks and find out how many addresses are still available after these allocations. Design the subnet.	10	CO1
9.	a)	Explain with diagram how the lost frame and lost acknowledgement are handled in Selective Repeat ARQ.	5	CO1
	b)	Let a data bit sequence M=1110100001 is transmitted but the receiver receives the sequence with any one bit corrupted. Use hamming code to identify the corrupted bit position so that it can be automatically corrected.	10	CO5
10	a)	Explain RIP routing?	7	CO2
	b)	Discuss about CDMA technology.	8	CO1
11.		Write Short note: (Any three)	3*5=15	
	a)	Logical Addressing	5	CO2
	b)	DNS	5	CO3
	c)	HDLC	5	CO4
	d)	Bluetooth	5	CO3
	e)	OSPF	5	CO3