computer Network 20th August 2024 BCS E 308L Guided by: Dr. Arivoli A. Apurba Koirala 228CE3799 towns the most mining that they will --Digital Assignment - IT Give some advantages and disadvantages of combining the session presentation, and application layer of our model into one single application layer in the Internet model with the self wall of the well was the work to the self of the self was the self of the self was the self of the self was the self of t Annex! town one one fine other thank a most of when the session, presentation and the application layer of the OSP models are combined who a single application layer, the they create the TCPIPP model a set smitheresternet a who is more that where it The TCP (2P protocol sufe to made of five layers: physical, dataline, network transport & application. The application layer, as proviously stated, is a constitution of the three topmost OID layers Dragra matically representing. OSI Mudel TCPISP layers Application Application Presentation Application Layers Seiston Transport Transport · Data How Network Network Data Link Layous Network Interface Physical

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	Application Applications.
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	mansport SCIP TCP UDP
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	at whom he return and adverge store it i antighteen the
my][Mills 11. Per Data et Link Indianan 155 Probable defined by
	water - most of the stand - all the and the underlying
	Physical networks.
- 8	and it completely walter could be thetwood with Construct interface
not !	and here makes booking with the barrier of mayer)
	Application Layer: Handler high level protocols used by applications
	to communicate over a network Profluculs like HTTP & FTP
	allow for web browsing 2 file transfers, respectively
	rewaps in
	Transport Lover: Responsible for end-to-end communication,
	Top land of 120
	providing volicity franter franter franter.
	providing reliable data transfer through TCP protocol or UDP.
+	Nethous dalla Remarks for Justicel addressing & routing with
-	Network Layer: Responsible for Justicel addressing & routing with
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-	Nethous dalla Remarkiste for justicel addressing & routing with
-	Network Layer: Responsible for Justicel addressing & routing with

Network Interface cayer: Combination of Duta Link & Physiol Layer nanages physical transmission of data over a network medium and the navdware addressing necessary for deta exchange within a network segment Advantages of TCPICP over OSE model are as follows: i) Simple architecture: combining the cossion, presentations application layer mto single application layer makes it easier for developers to understand & implement profocols ii) Efficiency: With faver layers to traverse, communication between devices can be more effectent as there is tess overhead in the communication process. This leads to faster date miain work iti) Aandardization: A single application layer makes it easier to styndardice communical methods & proteots, which leads to an effective implementation cross-systems. (v) Prexibility: Combined layers allow developers to build mure automized solutions without being constrained by the street boundance of seperate layers. Disadvantages of TOP TOP when compared to OD modelax as follows; i) Low of Modularity: The ODD model's layered approach allow for clear repression of concerns, making it easier to frontles how, update, and replace specific functionalities combining these layers with one can make it hunder to botate L fix issues, as everything is hundled together.

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1	Directed Complexity in the Application Layer Complexity
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	layer now hay to handle trusk that we're previously
_	hundled by three seperate layers.
	and find) unclock with a set of the work with (a
~	Doduce d (NAM)
119	Higher Maintenance (0)3: Combined application layer is
in	more costly & time consuming as updating or changing
	on function might affect others within the same
	layer and the seal of the seal
	The state of the s
(N)	Potential for Security Issues: Security features that were previously
	handled by separate layer might be less robust when
	combined who and single layer? This can de create valuerabilities
	that are all harder that detect bit nitigate
w nia	a distribution and for five with allowing books well well
2.	For each of the following four networks, discuss the conse-
	queries if a connection fails.
	queries if a connection fails.
9)	Fire devices arranged in a mesh topology.
b)	
()	five devices arranged in a bus topology.
d)	Ave devices arranged in a ring topology.
	And the state of t
a)	(davite)
	(100)
	device device device
91	CONTINUE CONTROL OF THE PROPERTY OF THE PROPER
-	Figure! Mesh topology
	device material is to
Sec	Engly of Style Control
1111	tille your sounders with the feer outs tool bottom
-	In mesh topology, all devices are connected to each
_	other. A imple connection failure has minimal impact
	because data can still travel through alternative putus.

This topology is highly fault-tolerant, ensuring that the report remains operational even if one or more connection Five Devices arranged in a Star Topology (NA Counting to (device Fig: Star topology (derice) (device In a star topology, all devices are connected to the central hub. If a connection between a device and the hun fails, only that purticular device loses convertivity, while the rest of the network remain maffeded must and committee at to Five Device Arranged in a Bus Topology Fig: his to pology device device device 17 Buy In a low topology, all denices share a single communication line or but. If the main bus cable fails, the entire network can be brought down, as no device can communicate with any other Additionally if a convention to one device fails, that device is isolated, but the rest of the network may still function

1	Ave Devices Arranged in a Ring Topology.
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	device repeator
	principle with wards
	device device
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	device
Losan	all to the many set to medical set but I
	In a ring topology; each device is connected to
11	two others, firming " a closed loop . If a style connection
	m the ring fails. It woreaks the loops disrupting
	communication for the entre network. The network can
	potentially continue to function if there is a mechanism in
	place to revolte the data in the opposite direction,
	but nithout such a mechanism, the network becomes
	inoperable instituted and month with materials
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	00/10000000000000000000000000000000000
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	Find the end-to-end delay (including transmission delays and
	propagation delays on each of the three links, but ignoring
	quelleing delays and processing delays) from when the last
1	bit of that packet is received at the server at the right. The
	speed of light propagation delay on each link distances are
	is 3×108 m/sec. Note that the transmission rates are in
	Mbps and the link distances are in Km Assume a packet
	Length of 16000 bits. Give your amover in williseconds.
	6.01-3.1
Ī	

	114 2.1 2
computer Router	1 Router 2 Server
4- Link 1 ->))]	L-Link2-79 TOK-Link3->
1 301 x 001	
Transmission rate: 10 Mbps	Transmission rate: 100 Mg
Link length: 2 km	Link length: 3 km
00001	Fransmission raft: 10014 bps
201 - 001	Link length: 1000 km

Colution:

Given 1.0 + 21.0 1. 2.1 = 16000 bits

by i) distance between computer and routers

(link length 1) = 2 km and ...

Randwidth 2 (Transmission rate 2) = 10 Mbp).

(m/c 2) distance between Router 1 & Runter 2,

(link length 2) = (000 km Bandwidth 2 (Pranomission rate 2) = 1000Mbps

Link 3) distance between Router 2 & Server,

(1114 1 (111 3) = 3 KM

Bandwidth 3 (Pransmission rate 3) = 100: Mbps

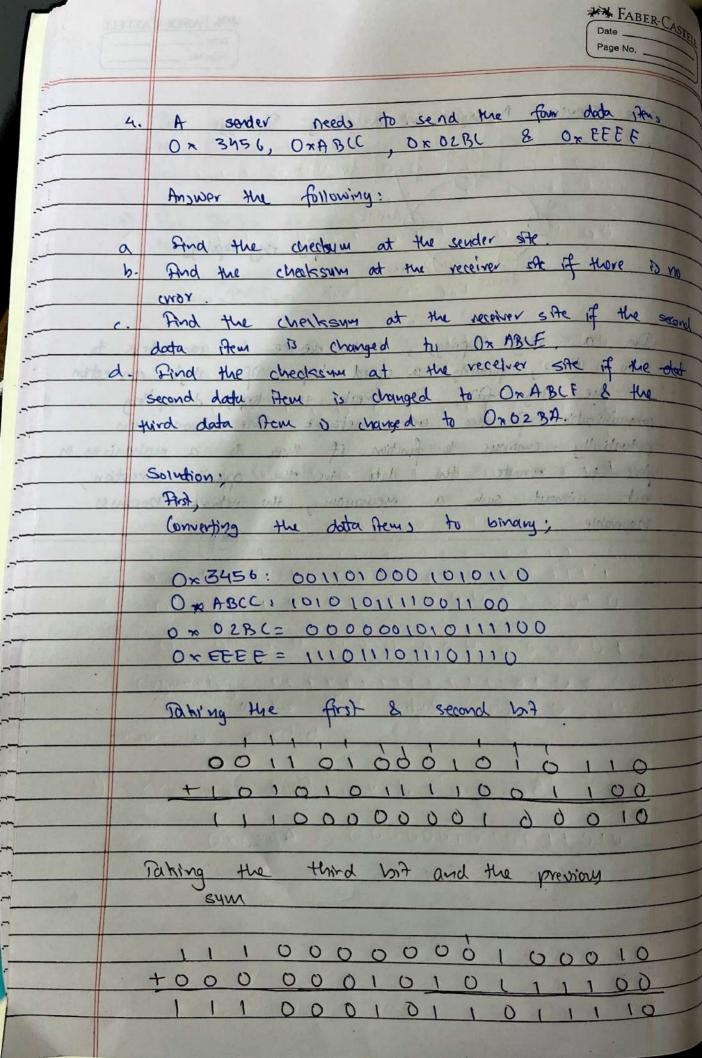
has a sel we know, sublitud and has not been and the transmission delay (To) = size / Length of parket soften dell own to with contracting INDEL TO For Link 1 Ton = 160000 = 1.6 ms $for Link2 TD_2 = 16000$ = 0.16m3 for LMK 3 JD3= 16000 100 × 106 = 0.16 M) To = 1.6 + 0.16 + 0.16 4,30000 = 11.92 ms draw lade again, hun objection consulted worker we know it is (I show that) propagation delay = Link length propagation speed for Lmk 1 (BB)=2×103

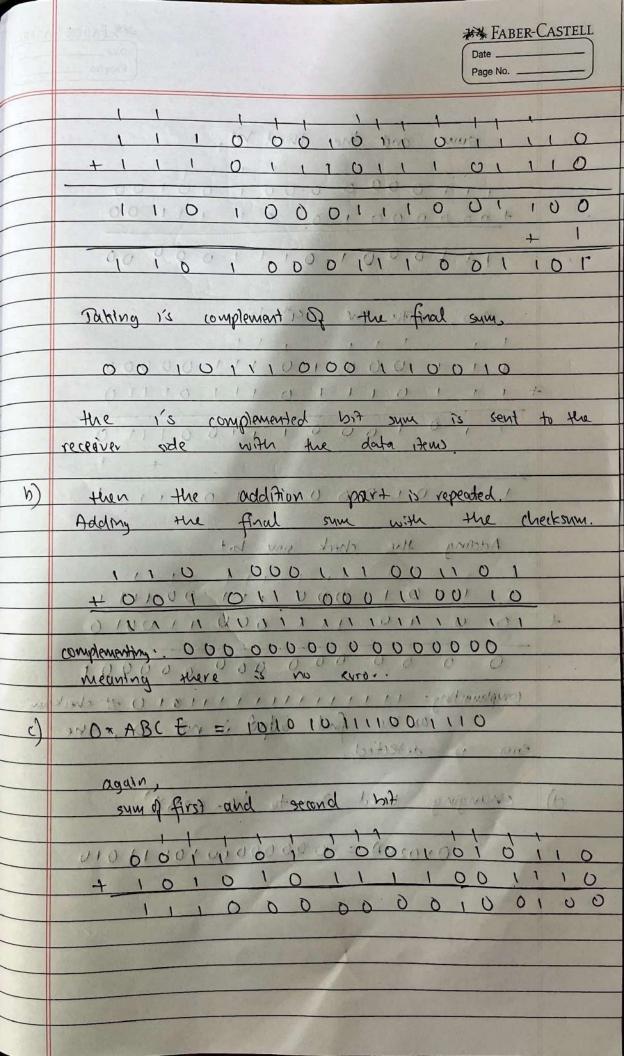
2 x 108 3 x 108

= 6.67 ×10 3 ms.

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_	for Link 2 1000 × 103
_	3×108
Jal	the property to be the design of with any
	when some more greater = 3.33 ms. hourt not
_	Software Contract of the Contr
	for Link 3 (PB) = 3×103
	3×10g
10	is planting about young last your of a subsection of
The State of	= 0.01 mg
	evalue const
	PD = 6.67×10-3 + 3-33 1+ 0.101
	South maryland at it most
	= 3.34667 & 3.35
	18 telera 19 Mens 1 loss on words
	now for entered of he even I allow where !
	we know,
100	today to expect to the state of
3218	Rotal End to End Delay = SEPD; + E(TD);
	= 1.92 + 3.35
	= 5.27 ms
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Bum and the third bit, 111000000000000000 +000000100101000000+ 1110000100100000 now, with the 4th bit. 11100000100111000000 + 1 1 0 1 1 1 0 1 1 1 0 1 1 1 0 1 1 0 0 0 0 1 1 1 0 0 1 1 1 0 11110000001111001111 Addies the first hand the this this there Adding the check sum bit 1 100011000011010001111 + 10,00111100001110010 1000000000000001 error is detected! d) changing third item to 'or 02BA' 0x0287 = 0000000010111010 1001111010101

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	THE PERSON LINE
from the previous question,	
COOLS WINNESS	10 30 100
Sum of find 8 second.	hA is.
	TO VALUE
11100000000100	100
with the third bit	
in the state of th	
1110000000 100 100	
+00000001010 111010	
10101000101101110	
now, adding the thou fourth	bit with the sum,
	111
111000101101	
+111011101110	
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	.+1
11010001110	01101
THE REPORT OF THE PERSON OF TH	100000000000000000000000000000000000000
adding the check sum to the	fired sym
Note: 5	
10 1 11 000 111 01	1101
+00161110001	10010
	1 1 1 1 1 1 6
complementing: 0 000000000	00000 # check syny
as a is the output, error is v	nut detected.