Mid Semester Examination, Spring - 2021

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Name : Shawon Barman Registration ID: 18201093

Semester: 2nd Year : 3rd

Course Code: CSE 319 Course Title: Computer Networks

Section : A Exam date : 16-09-2021

4 No Qw Ans

My birth~~day~~ month is July.

$\therefore n = 7$

so the new table in the below:

Department	Number of Hosts requirement)
CSE	60 x 7 = 420
CE	11 x 7 = 77
EEE	13 x 7 = 91
Phy	51 x 7 = 357
Eng	40 x 7 = 280
Law	84 x 7 = ~~288~~ 588
Admin	12 x 7 = 84

class A private address is : 10.0.0.0

(P.T.O)

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Now i am sort the department according to hosts requirement:

1. ~~CSE = 420~~
1. Law = 588
2. CSE = 420
3. Phy = 357
4. Eny = 280
5. EEE = 91
6. Admin = 84
7. CE = 77

Department
CSE
CE
EEE
Phy
Eny
Law
Admin

(P.T.O)

(O.T.O)

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Base network is : 10.0.0.0 /16

Network name	Number of host	Network address	Subnet Mask	First host address	Last host address	Broadcast address
Law	566	10.0.0.0/22	255.255.252.0	10.0.0.1	10.0.3.254	10.0.3.255
CSE	420	10.0.4.0/23	255.255.254.0	10.0.4.1	10.0.5.254	10.0.5.255
phy	357	10.0.6.0/23	255.255.254.0	10.0.6.1	10.0.7.254	10.0.7.255
Eng	280	10.0.8.0/23	255.255.254.0	10.0.8.1	10.0.9.254	10.0.9.255
EEE	91	10.0.10.0/25	255.255.255.128	10.0.10.1	10.0.10.126	10.0.10.127
Admin	84	10.0.10.126/25	255.255.255.128	10.0.10.129	10.0.10.254	10.0.10.255
CE	77	10.0.11.0/25	255.255.255.128	10.0.11.1	10.0.11.126	10.0.11.127

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1 No Qus Ans (A)

My birth month is July.

$\therefore n = 7$

Given that,

$R1 = 500 \text{ kbps}$

$R2 = n \times 200 \text{ kbps}$

$= 7 \times 200 \text{ kbps}$

$= 1400 \text{ kbps}$

$R3 = 800 \text{ kbps}$

The throughput for the file transfer $= \min\{R1, R2, R3\}$

$= \min\{500\text{kbps}, 1400\text{kbps}, 800\text{kbps}\}$

$= 500 \text{ kbps}$

$\therefore$ The throughput for the file transfer $= 500 \text{ kbps}$.

(P.T.O)

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1 No Qus Ans (b)

TCP/IP protocol stack ensures the end to end communication where each layer performs its task. It has five model layer:

1. Application layer
2. Transport layer
3. Network layer
4. Data link layer
5. Physical layer.

① Application layer: The application layer is where network applications and their application-layer protocol reside. The internet's application layer includes many protocols, such as the HTTP, SMTP, and FTP. ~~We'll refer to th~~

② Transport layer: The internet's ~~transport~~ transport layer transports application-layer messages between application endpoints. In the internet there are two transport protocols, TCP and UDP.

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③ Network layer: The internet network's layer is responsible for moving network layer packets known as datagrams from one host to another.

④ Data-link layer: The data-link layer passes the datagram up to the network layer.

⑤ Physical layer: The job of the physical layer is to move the individual bits within the frame from one node to the next.

When user sent any message from another user. At the sending host, an application-layer message is passed to the transport layer. In the simplest case, the transport layer takes the message and append additional information (H_t) that will be used by the receiver-side transport layer. Then ~~the~~ The transport layer send this message to ~~the~~ the network layer. Then network layer added the host IP address (source and destination IP address). And send this to the data link layer. as a datagram. Then data link layer will add its own link layer information and create a link-layer frame.

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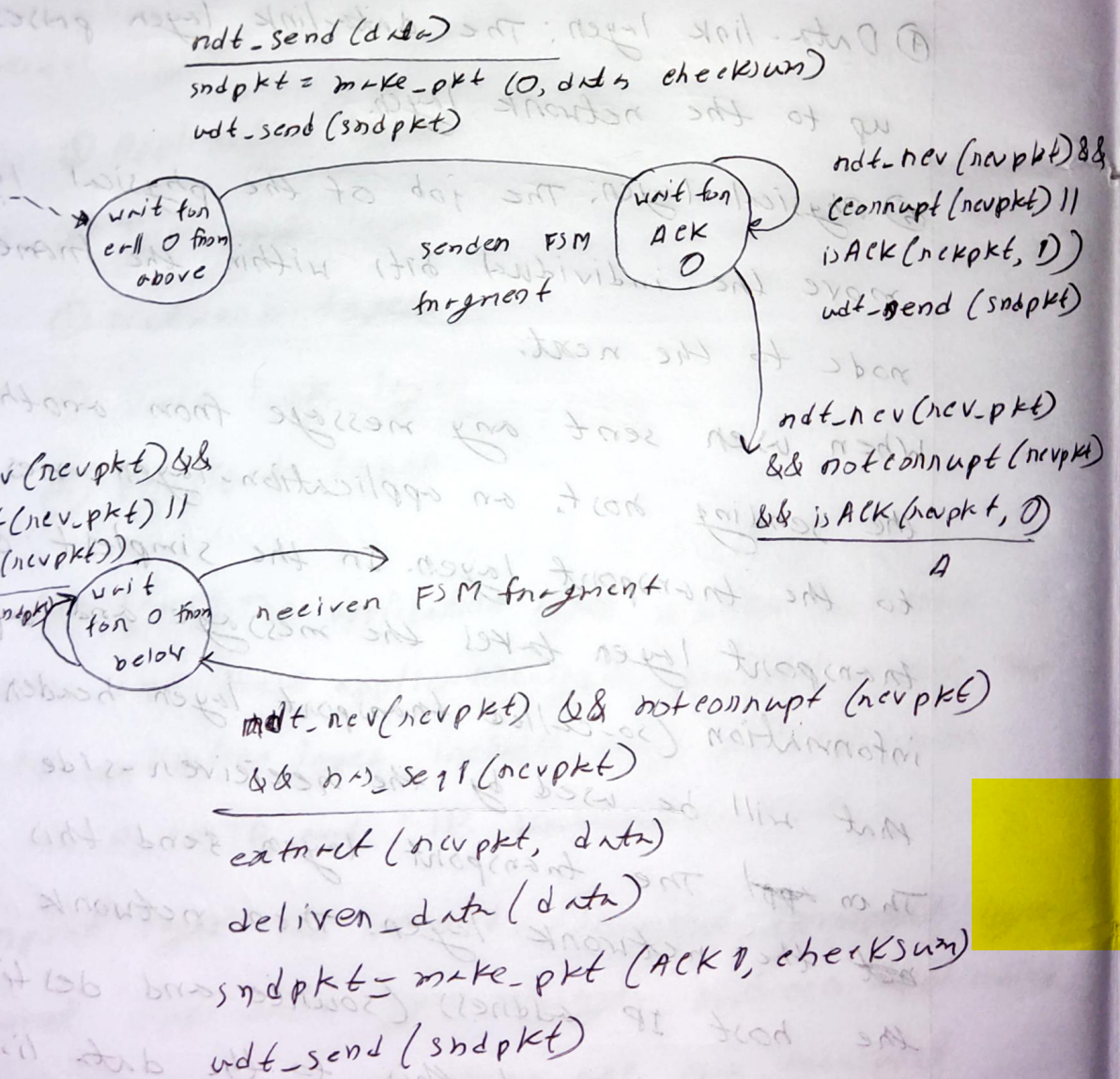
2 No Qw Ans) (a)

Hence I think, rdt ~~3.0~~ 2.2 is the best option. So, the finite state machine (FSM) specification is:



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2 No Ques Ans (b)

Hence i can use web cache or proxy server.
Because we know, web cache is a network entity that satisfies HTTP requests on the behalf of an origin web server. The web cache has its own disk storage and keeps copies of recently requested objects in this storage. A cache is also both a server and a client at the same time. When it receives requests from and sends responses to a browser, it is a server. When it sends request to and receives responses from an origin server, it is a client.

Typically a web cache is purchased and installed by an ISP. Also web cache is not expensive. And the uploading and downloading is very high on the proxy server.

That's why i can use web cache.