Q: 5] Flow control in the transport layer makes sure that the sender does not send data faster than the receiver can handle.

The receiver tells the client how much data it can accept which is called rwnd. So, as an example, if the receiver can only take 5 segments, the sender will send only 5 segments and then wait for permission before sending more. By this, it prevents the receiver's buffer from becoming full and stops data from being lost or dropped.

Q: 1] (a)

MAC Address		IP Address		Port Address	
S	D	S	D	S	D
Q	E	16	12	40155	40140
F	G				
H	J				
K	L				

Router 2 →
" 3 →

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(b) Destination port type will be well known / registered.

Q2. Ans:] Web cookies are small pieces of data stored on a user's browser by a website. They help improve the user experience by remembering important information. Cookies can keep users logged in, so they do not have to enter their username and password every time. In online shopping, cookies remember items added to the cart even if the user leaves the site. Overall, cookies make websites more convinient, easier to use.

Q3: John used POP3 (Post Office Protocol 3) to access his emails

When POP3 is used, the client downloads all emails from the mail server to local device by default, and deletes them from the mail server after retrieval. As a result those mails/messages are no longer available on the mail server and John cannot access them from other device or webmail.

Q: 41 When a user types a wrong domain name like "www.gogle.com" instead of "www.google.com" the DNS (Domain Name System) will try to find the IP address of "www.gogle.com".

Big companies like Google usually buy and register common misspellings of their website names. Google owns the domain "gogle.com" and sets it up so that it points to the same server as "www.google.com".

This can be done by,

1. Creating a DNS record or Cname record which points to the same IP address
2. When a user enters misspellings the DNS resolver finds server using that record.

The DNS is configured to point the same IP address so even if a person types wrong, the redirect it to the right website.

Question :07

(b) ~~Trans. time = 15x~~

each obj = 10MB
obj = 15
Web speed = 80Mbps
1byte = 8bit
obj size = 10x8
= 80Mbps

Transmission Tim (TT)

$$= \frac{\text{Data size}}{\text{Download speed}}$$

$$= \frac{\text{objnum} \times \text{obj size}}{\text{Down speed}}$$

$$= \frac{15 \times 80}{80} = 15 \text{ sec}$$

∴ Total transmission time is 15 sec.

(a) number of objects = N

Total RTT = TCP + HTTP

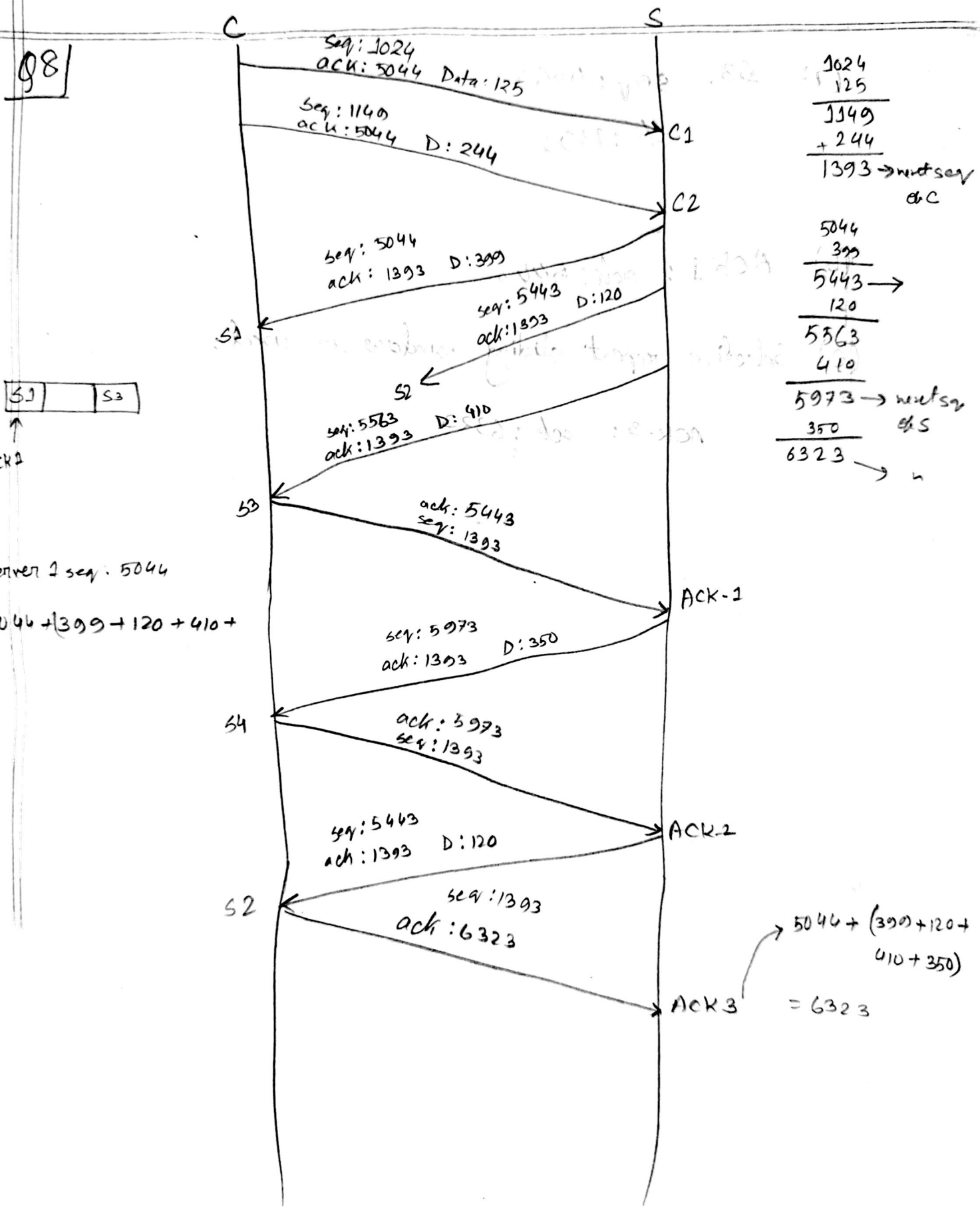
480 = 1 (15+15) + N(15+15)

$\frac{480}{30} = 1+N$

N = 15 objects

Ans:

Q8



1024
125
1149
+ 244
1393 → next seq of C

5044
399
5443 →
120
5563
410
5973 → next seq of S
350
6323 →

Server 1 seq. 5044

5044 + 399 + 120 + 410 +

5044 + (399 + 120 + 410 + 350)

= 6323

(a) S3: seq: 5563

ack: 1393

(b) ACK-1: ack: 5443

(c) Selective repeat sliding window is used:

ACK-3: ack: 6323