Physical — 1

Seq. ~~SYN~~ = 9667

ACK = 5550 + 568

rwnd = 8000 − 568 − 266 − 123

=

Summer − 22 (A)

1(c)(i) As time limit did not exceed. So it will be 50ms.

~~2(b)~~(ii) IP address recieved. So no DNS query.

∴ RTT = 25 × 2 = 50ms

To fetch all the object = (50 × 12) + (50 × 12)

= 1200 ms.

(iii) total time to fetch the object = 1200ms

DNS Query = 50ms

∴ total time to unpack everything = 12 × 85

= 1020

∴ total time to load the page = 1200 + 50 + 1020

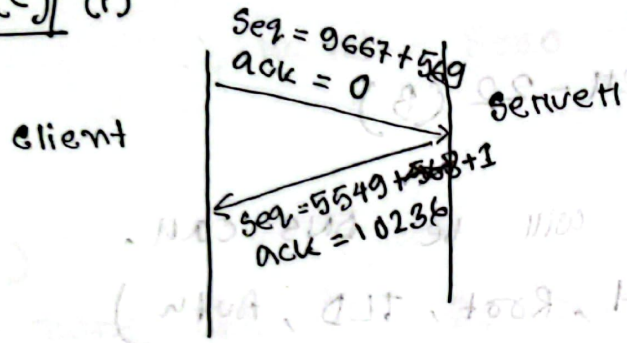
= 2270

2(b) | value of HLEN = 1010

∴ in decimal = 8+2 = 10

∴ header length = 10 × 4 = 40

2(c) | (i)



∴ Data segment 1 ack = 0 Seq = 5550

ack = 10236

acknowledgement number ask -করে thats why we do not have to add Data segment bytes.

(ii) As it did not recieve 2nd segment, so it will only send acknowledgment of 1st segment to the server.

Sequence = 9667 + 569 + 999 = 11235

acknowledgment = 5549 + 1 + 568 = 6118

rwnd = 8000 - 266 - 123 = 7611

3(c) | (i) Packets needed = ⌈2839939 / 3000⌉ = 10

(ii) 3rd last packets MF will be 1, as there is more packet to come. It would be 0 if there is no packet to come.

(iii) upto 9 packets data sent = (3000 × 9) = 27000

∴ leftover data = (28939 − 27000)

= 1939

∴ Removing header size = (1939 − 38) = 1901

Summer - 22 (B)

1(c) (i) As TTL ended. So there will be DNS call.
as there is 4 servers (local, Root, TLD, Auth)
So total RTT = 55 × 4 = 220 ms.

(ii) It is a presistent HTTP conection.

(35 × 2) + (35 × 2 × 21) = 70 + 1470

= 1540

(35 × 2) → TCP

(35 × 2 × 21) → HTTP

(iii) total time to load the PCA website.

= DNS + capture + download

= 220 + 1540 + (125 × 21)

= 4385.

2(b) (i) —> same

(ii) As it is a go back connection so it will not accept anything if something goes missing

∴ seq = 11235 —> previous

∴ rwnd = 8000 (As first one has been proces

3(c)

(i) There will be ~~27~~ ⌈21739 / 2038⌉ = 11 packets.

(ii) As it is last packet, so the MF will be 0.

(iii)

[Fall 22 (A)]

1(c) —> [illegible]

2(c) (i). Total time to fetch DNS = 19 × 4 = 76ms

(ii) (35 × 2) (->TCP) + (21 × 70) (->HTTP) + (21 × 5) (-> Latency)

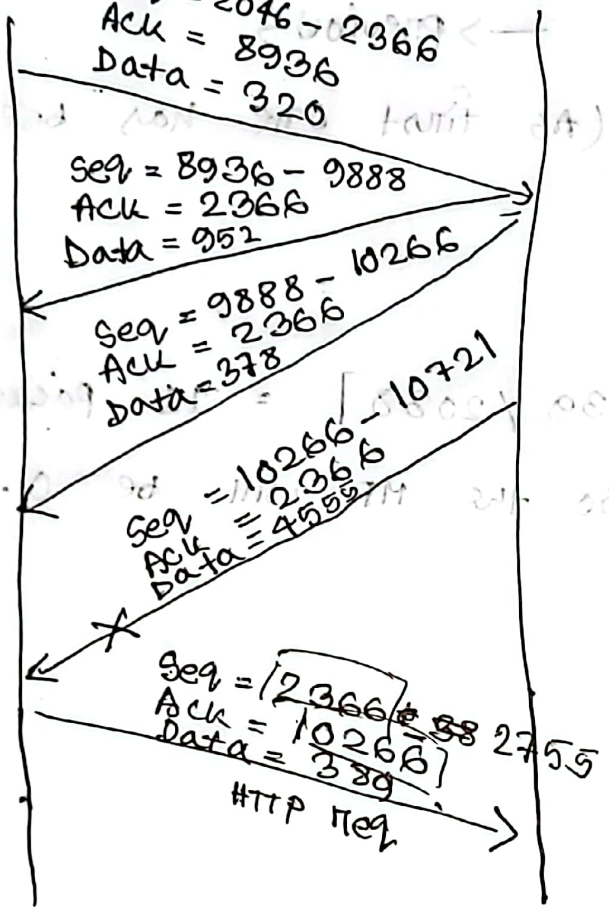
= ~~760~~ 1645

(iii) Total time needed = 76 + 1645 + (125 × 21)

= 4346

3(b) it will ~~flag~~ make U flag 1. And set the pointer to = 3000 + 700 = 3700.

3(c) (i)



(ii) Rwnd would be = 3020 - 300 - 99

= 2621

(iv) After receiving DS-4

Seq No = 2755
Ack No = 10266

→ No thing will be changed as there is one packet missing

[Fall 22 - B]

1(d) Accan delay = 44 ms

Internet " = 3.05s = 3050 ms

Lan " = 50 ms

=> Proxy hit = 0.6 × 50 ms = 30

Internet hit = (44 + 3050 + 50) × .4 = 1237.6

∴ total delay = (1237.6 + 30) Lan delay যোগ হবে না

= 1267.6

2(c) (i)

it would be = (26 × 4) = 104 ms.

(ii) the request would be

= (39 × 2 × 30) — TCP + (39 × 2 × 30) — HTTP + (4 × 30) → Latency + 104 → DNS

= 4904

As it is from the point of requesting website that is why we has to add DNS.

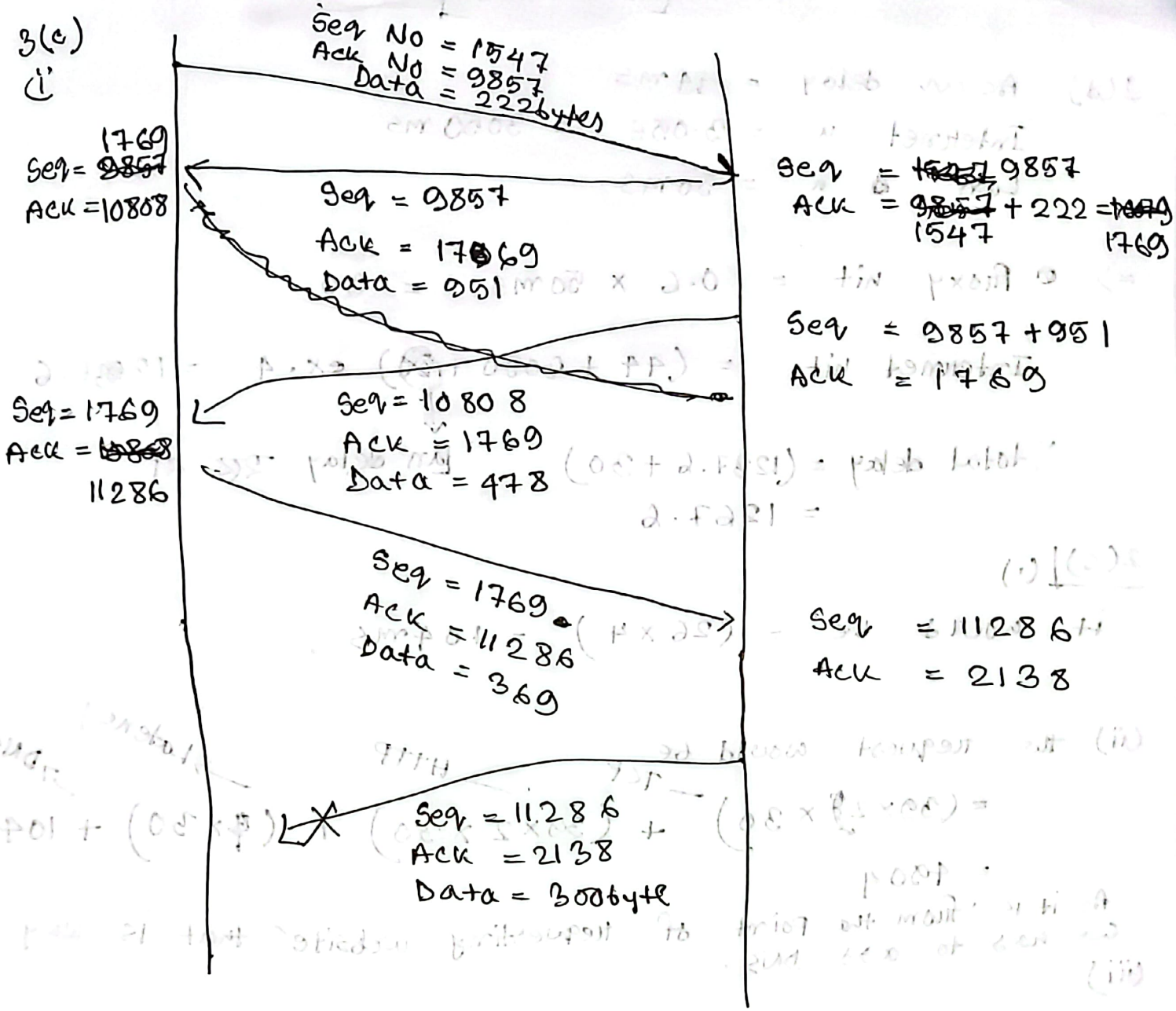
(iii)

total time = 4904 + (215 × 30) → Packet

= 11354 ms

3(c)

(i)



∴ Data Segment 3 = Seq = 11286
Ack = 21381

(ii) After 5th data segment the rwnd would be = 1684 - 99 - 20
= 1384

(iii) Seq = 2138
ack = 11286 → Because A data packet droped. So ack. number won't increase and client didn't sent anything so seq. will also remain same.

[Spring 23 (A)]

2(c) (i) RTT required = (2 × 23 × 4) → RTT, device amount
= 184 ms

(ii) RTT = DNS + TCP + HTTP
= 184 + (39 × 2) + (39 × 2 × 30)
= 2602 ms

(iii) Total time = File capture RTT + Delay.
⇒ Delay = 5344 - 2602 = 2742 ms

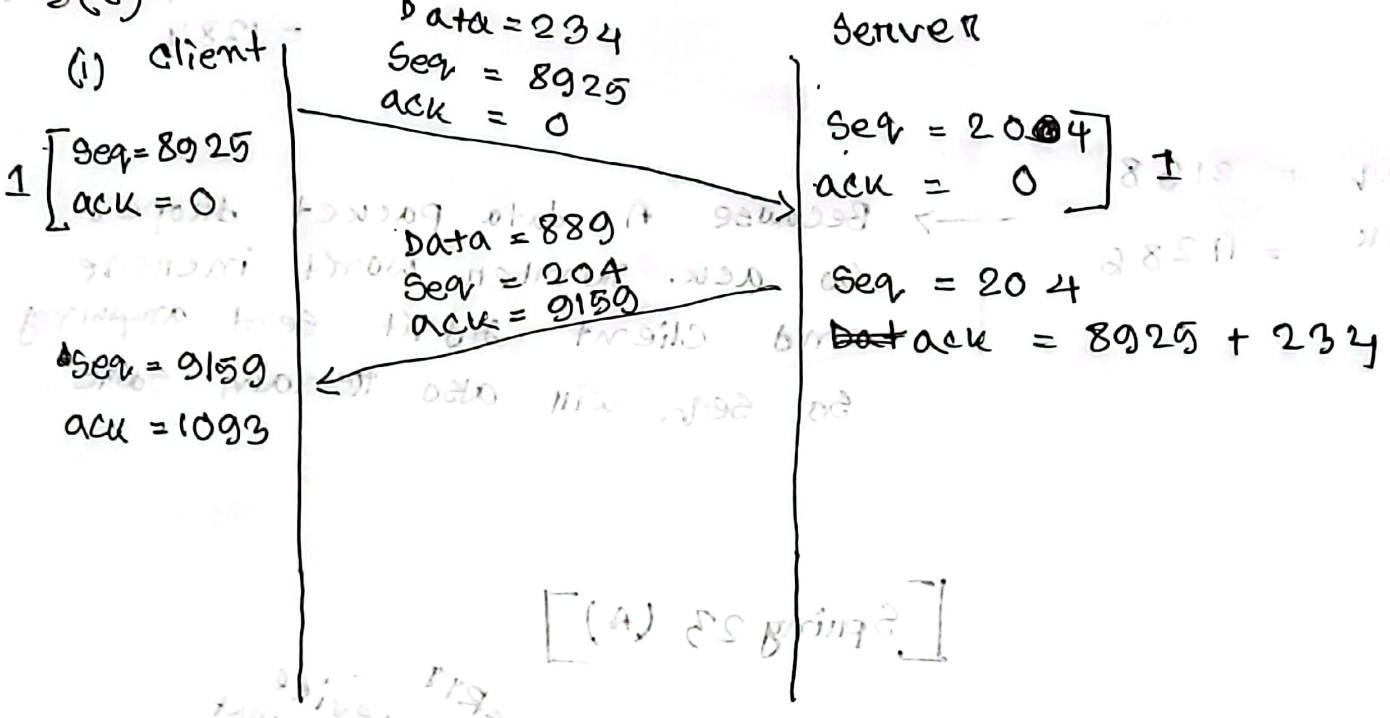
file size = 12 × 8 = 96 Mbits.

∴ x = $\frac{96 \times 30}{2.742}$ = 1050.3

96 Mbits file size, 30 sec file total.

3(c)

(i) Client



∴ For 4th data segment

Client Seq = $9159 + (234 \times 3) = 9861$

ack = $1093 + (889 \times \frac{2}{3}) = 2871$

(ii) For the 13th http

Seq = $(12 \times 234) + 8924 + 1 = 11739$

ack = $(9 \times 889) + 203 + 1 = 8205$

(iii) RWND of the client without first 5 segments

= $10000 - (13-5) \times 889$

= 3777

Spring 23 (B)

1(c) Acces link = 123 mbps Lan link = 1023 mbps

Server can upload = 40 × 4 = 160 ~~byte~~ mb/s

= ~~1280~~ ~~bits~~ mb/s

= ~~1280 × 10⁻⁶~~ mbps

∴ Acces ~~Lan~~ Utilization = $\frac{160}{123}$ = 1.300 × 100

= 130%

∴ ~~Acces~~ Lan u = $\frac{160}{1023}$ = 15.6 %.

2(c)

i. As @Nonte's pc already has the DNS stored

= (44 × 2) = 88 ms only local DNS query.

(ii) total time required to capture object

= 88 + (89 × 2 × 28) + (89 × 2 × 28)

= 10056

(iii) total time = object fetching time + Latency.

10988 =

[Summer 23 (A)]

2(c)

i. it would be = 25 × 2 = 50 ms as it already fetched by PC-B.

(ii) total time to fetch = TCP + HTTP + file download
= (48 × 2) + (50 × 2 × 18) + (18 × 123)

Here, sending server = 48 ms
receiving message = 50 ms

∴ One RTT = (48 + 50) = 98

∴ total = 98 + (98 × 18)
= 1862

(iii) Total time = 50 + 1862 + (18 × 123)
= 4126