CSE421

Assignment no - 01

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Section - 23

Q-1

(i) Rt Presentation layer.

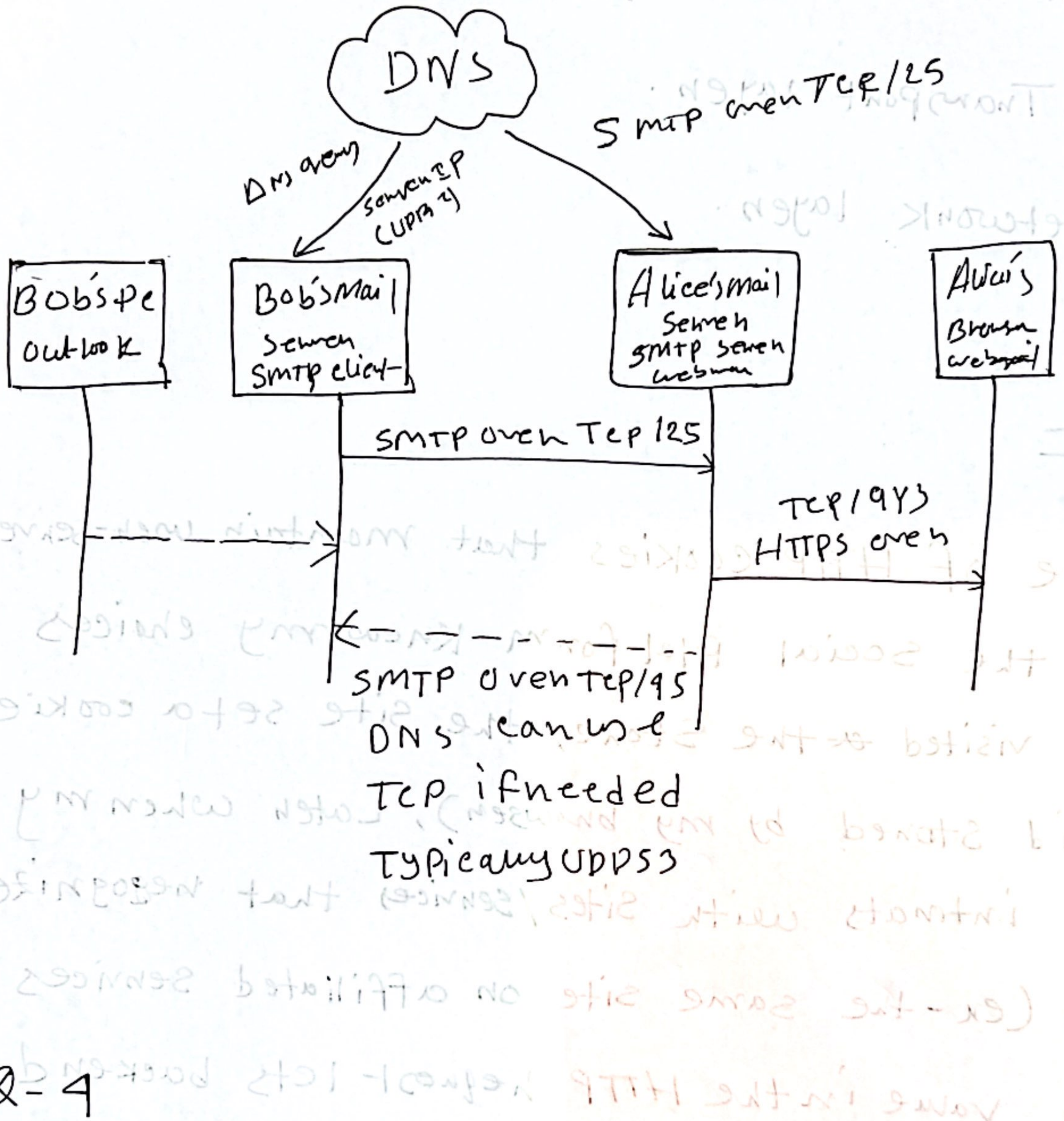
(ii) Transport layer.

(iii) Network layer.

Q-2

Because of HTTP cookies that maintain user-server state the social platform knew my choices when I visited ~~a~~ the Stone, the site set a cookie (unique id stored by my browser), Later when my browser interacts with sites/services that recognize that ID (ex - the same site on affiliated services the cookie value in the HTTP request lets backend systems associate you with prior Product views. and show recomendation/ads for those items. cookies are explicitly used for shopping carts, recommendations and session state; servers generate a unique ID and keep it in a backend DB tied to your activity.

Q-3



Q-4

— A record for the web host www.gamingforall.com :

IN A 200.10.20.7

— MX for the domain pointing to a mail host

name (not an IP) gaming forall.com) IN MX 20

mail.gamingforall.com

— A record for the mail host mail.gaming

forall.com IN A 200.10.20.7.

— (optimal but common) make bare domain map

to www via name gamingforall.com IN

(NAME www.gaming forall.com)

— Authoritative name server for your zone

gaming forall.com IN NS dns1.gamingforall.com

dns1.gamingforall.com IN A <your-DNS-server-

— IP)

Q-5

Each tab opens its own TCP connection using a

different source ephemeral port. The server

distinguishes sessions by the socket-4 tuple (src,

IP, src port, dst IP, dst port)

even if both tabs go to the same server IP

and same destination port, their source ports differ so, the server keeps them seperate.

Destination - for HTTP replies come from port 80 or the server to the client's ephemeral port

- for HTTPS replies come from port 443 on the server to the client's ephemeral port.

Q-6

(i) Total RTT = 12ms + (18 x 15 ms) = 282 ms

(ii) Total size = 18 x 12 MB → 216 MB x 8 = 1728 Mb

~~Linke~~ Link rate = 92 Mb/s

total file transmission time $\frac{1728 \text{ mb}}{92 \text{ Mb/s}}$

= 9114 2.852 ms.

Q-7

(1) Dept Proxy hit (50%) = 35 ms

Branch Proxy (25%) 285 ms

Origin (25%) = 35 + 50 + 300 + 200

= 585 ms

Average response rate = 0.5 x 35 + 0.25 x 0.85

+ 0.25 x 585

= 185 ms

(2) Just visited means it's now cached in the department Proxy, so time is Dept-LAN Proxy = 35 ms.

Q - 8

Given,

client ISN = 1255

Server ISN = 2010

Initial hwnd: Client 5000 B, Server 1000 B

Client- Data size : c1 - 320, c2 - 111, c3 - 260

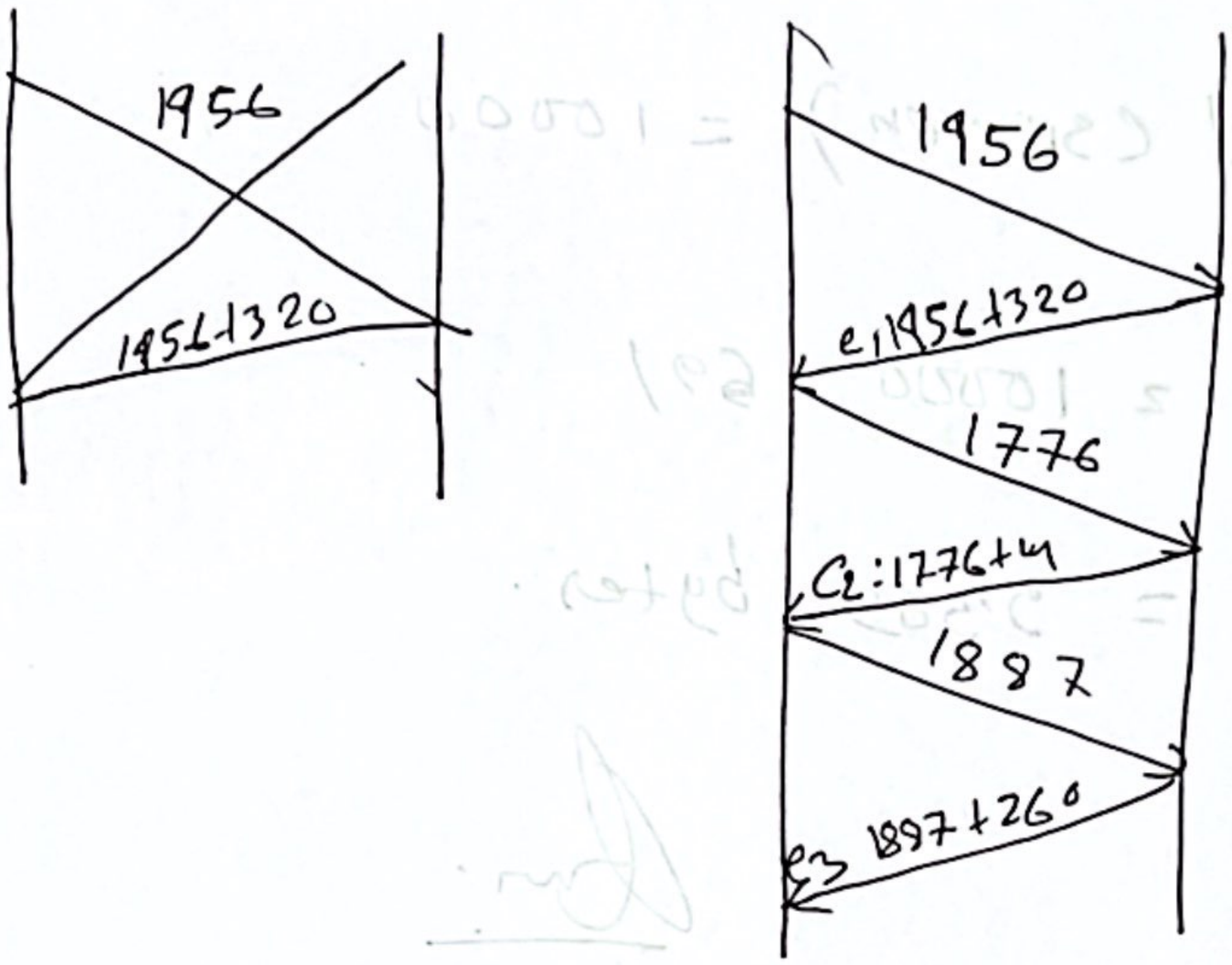
Server data sizes S1 - 220, S2 - 421

Protocal : Go - Back - N (GBN)

(1) In Go - Back - N, if Ack for S1 isn't received (loss / corruption on timeout - the server retransmits S1 (retransmission after timeout on duplicate - Ack condition)

if C had already gotten S1 earlier, the present S1 is a duplicate and is discarded (Because GBN accepts in-order data). It accepts the retransmitted S1 and advances Ack accordingly.

(11) e_1 :



Ack field in e3 Acknowledge seven data received in order with Go-back-N and the state of server of S1, the client is expecting the first seven data byte is 2011, So e3 carry Seq - 1887, Ack - 2011

(iii) $C1 + C2 + C3 = 320 + 111 + 260$

$= 691$ bytes

Initial wind (server) $= 10000$

new wind $= 10000 - 691$

$= 9309$ bytes.

Ans.