

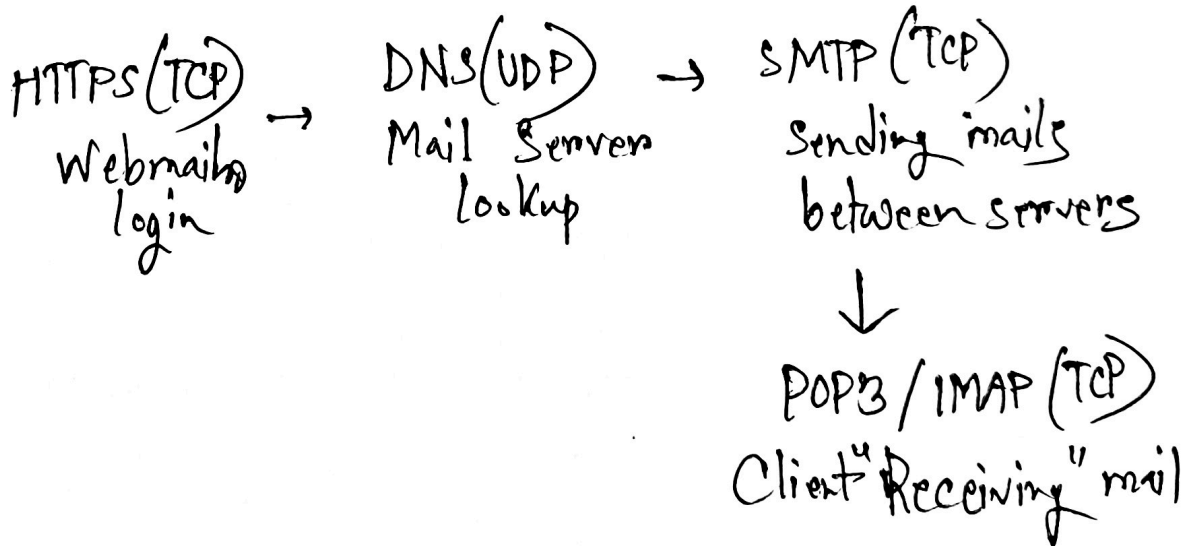
Q1]

- I. Application
- II. Physical
- III. ~~is~~ Data link

Q2]

Cookies are stored per browser. Chrome and Internet explorer maintain separate cookies store, so cookies set in Chrome are not accessible in IE, hence no personalised content.

Q3]



Q4]

Type: A

Name RR = (www.gamingforall.com, 200.10.20.8, A)

↓                      ↓                      ↓

name                      value                      type

RR = (gamingforall.com, <sup>ns1.</sup>gamingforall.com, NS)

↓                      ↓                      ↓

name                      value                      type

(Domain)                      (Authoritative)

Q5]

Protocol: UDP

Port type: Ephemeral (source port)

Server differentiates requests by destination IP address and possibly multicast group address

But since source port is same, differentiation by source IP addresses.

Q6

i. Number of items =  $1 + 34 = 35$

Total ATT =  $35 \times 65 = 2275 \text{ ms}$

ii. Transmission time per object =  $32/64 = 0.5$   
 $= 500 \text{ ms}$

Total transmission time =  $35 \times 500 = 17500 \text{ ms}$

Q7

i. Avg. Response time =  $0.4 \times 15 + 0.3 \times 30 + 0.3 \times 300$   
 $= 105 \text{ ms}$

ii. EE dept proxy miss, BRACU proxy hit  $\rightarrow$   
delay =  $30 \text{ ms}$

Q8)

i. Server resends S1 because either the original S1 segment was lost or the acknowledgment from the client for S1 was lost. Since they are using selective repeat, the client will accept S1 if it is within its current receiving window, buffer it and send an ACK for S1 if it hasn't already been acknowledged.

ii. C1 starts 1991 (ISN+1)  $\rightarrow$  ends 2331  
C2 starts at 2332.

S1: 1533  $\rightarrow$  1799

S2: 1793  $\rightarrow$  2012

Client has received S1 & S2 successfully; so it ACKs the next expected byte = 2013.

So, Sequence number = 2332

ACK num = 2013

(iii)

$$\begin{aligned}\text{Total received} &= c_1 + c_2 + c_3 \\ &= 921 + 320 + 111 \\ &= 852 \text{ bytes}\end{aligned}$$

$$\text{Initial round} = 12000 \text{ bytes}$$

$$\begin{aligned}\therefore \text{New round} &= 12000 - 852 \\ &= 11148 \text{ bytes}\end{aligned}$$

$\therefore$  Server round after receiving  $C_3 = 11148$  bytes.