Q1]

I. Application
II. Physical
III. Data link

Q2]

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

Q3]

HTTPS (TCP) Webmail login → DNS (UDP) Mail Server lookup → SMTP (TCP) Sending mails between servers

↓

POP3 / IMAP (TCP) Client "Receiving" mail

Q4]

~~Type: A~~

~~Name~~ RR = (www.gamingforall.com, 200.10.208, A)

www.gamingforall.com → name
200.10.208 → value
A → type

RR = (gamingforall.com, ns1.gamingforall.com, NS)

gamingforall.com → name (Domain)
ns1.gamingforall.com → value (Authoratative)
NS → type

Q5]

Protocol: UDP

Port type: Ephemeral (source port)

Servers differentiates requests by destination IP address and possibly multicast group address But since source port is same, differentiation by source IP addreses.

Q6

i. Number of items = 1 + 34 = 35

Total RTT = 35 × 65 = 2275 ms

ii. Transmission time per object = 32/64 = 0.5
= 500 ms

Total transmission time = 35 × 500 = 17500 ms

Q7

i. Avg Response time = 0.4 × 15 + 0.3 × 30 + 0.3 × 300

= 105 ms

ii. EEE dept proxy miss, BRACU proxy hit →

delay = 30 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 withhin its current receiving window, buffer it and send an ACK for S1 if it hasn't already been acknowledged.

ii. C1 starts 1917 (ISN+1) → ends 2331

C2 starts at 2332.

S1: 1533 → 1792

S2: 1793 → 2012

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

So, Sequence number = 2332

Ack num = 2013

(iii)

Total received = c1 + c2 + c3

= 421 + 320 + 111

= 852 bytes

Initial rwnd = 12000 bytes

∴ New rwnd = 12000 − 852

= 11468 bytes

∴ Server rwnd after receiving C3 = 11468 bytes.