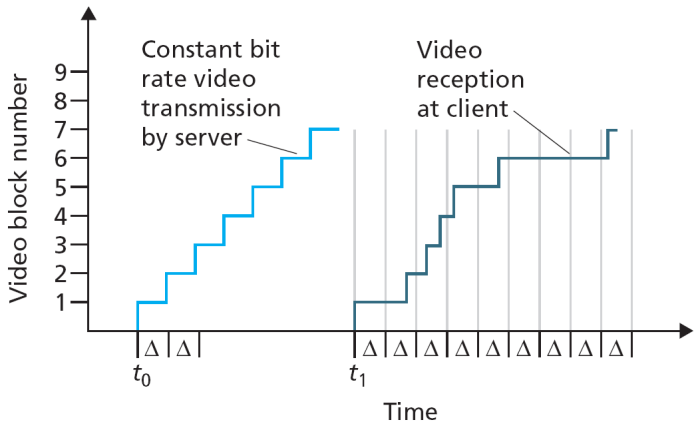
CSE204 Computer Networks
2016/2017 Spring - Final Exam

Name and Surname: Student Number:

Multiple Choice (Single Answer) Questions (44 pts, 4 points each)

Q1: Consider the figure below.



Suppose that the client begins playout at t_1 (no playout delay). How many blocks of video will have arrived at the client in time for their playout?

a. 1,2,3,4,5 b. 4,5,6,7 c. 1,4,7 d. 1,4,5,6

Q2: According to figure in Q1 above

What is the smallest playout delay at the client, such that every video block has arrived in time for its playout?

a. $t_1 + \Delta$ b. $t_1 + 2\Delta$ c. $t_1 + 3\Delta$ d. $t_1 + 4\Delta$ e. $t_1 + 5\Delta$

Q3: Which one is **not** true?

a. Path loss is due to the attenuation of the electromagnetic signal when it travels through matter.

b. In ad-hoc mode, wireless hosts have no centralised infrastructure with which to connect.

c. Hidden terminal problem and signal attenuation (fading) are not major problems of wireless domain.

d. The beacon frames permit nearby wireless stations to discover and identify the AP.

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Q4: Lack of traffic isolation, inefficient use of switches and managing users (moving places) are reasons for using _____.

a. Router b. Server c. VLAN d. Base station e. LAN

Q5: Which one can be considered as a realtime application?

a. web documents b. audio/video c. file transfer

d. text messaging e. e-mail

Q6: Which is used by hosts and routers to share network-level information?

a. DHCP b. RTP c.NAT d. HTTP e. ICMP

Q7: If an organisation using subnet mask a.b.c.d/23 how many host can be allocated within same subnet?

a. 23 b. 255 c. 512 d. 511 e. 256

Q8: _____ is not a characteristic of TCP.

a. fast recovery b. jigsaw tooth c. slow start

d. non reliable transmission e. cumulative act

Q9: Which one is **not** true?

a. Switches are link layer devices, routers are network layer devices.

b. Routers have different IP for its each interface.

c. Switch determines the good paths that packets take from senders to receivers.

d. Each router has a forwarding table that maps destination addresses to link interfaces.

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Q10: Network layer packet is called _____.

a. segment b. data c. frame d. datagram e. none of above

Q11: Which one is **not** true?

a. TCP provides a reliable byte-stream between client and server but UDP does not.

b. Nether TCP nor UDP guarantee that a certain value for throughput will be maintained.

c. Nether TCP nor UDP guarantee that data will be delivered within a specified amount of time.

d. Nether TCP nor UDP provide confidentiality (via encryption).

e. You would use TCP if you wanted to do a transaction as fast as possible.

hızlı işlem için UDP kullanılır.

General Format Questions

Q12: (10 pts) Please perform Cyclic Redundancy Check calculation with given data below both for sender and receiver side. Data (D): 1010101010 and Generator (G): 10011

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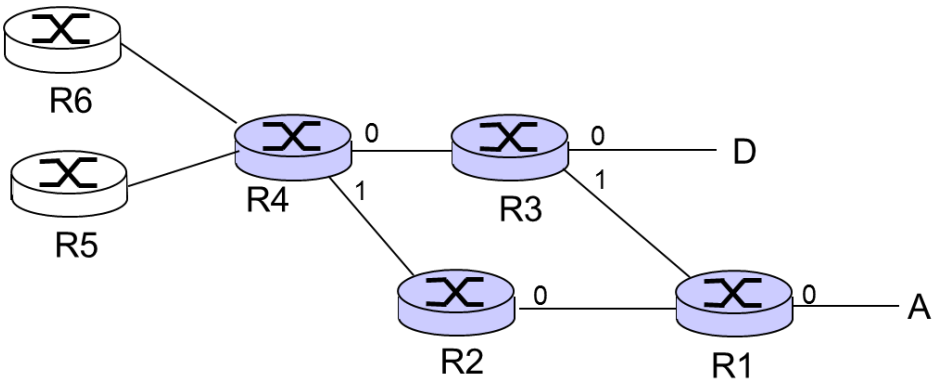
Q13: (10 pts) Assume that we have topology as shown in figure below. R4, R3, R2 and R1 routers are MPLS routers. Draw full row-column list MPLS forwarding table of these 4 routers after full convergence.



Q14: (10 pts) Explain each delay that comprised by nodal delay as shown in formula below and indicate time scale (i.e. microseconds, milliseconds) of each with reasons.

$d_{nodal} = d_{proc} + d_{queue} + d_{trans} + d_{prop}$

dproc : Nodal processing delay that related to (i.e. router internal processing) packet header processing etc. typically measured in microsecond.
dqueue : Queuing delay, time takes a packet waits in the buffer (memory) for transmission, typically measured in millisecond.

dtrans : Transmission delay that is time required to transmit bits from buffer to communication medium, typically measured in millisecond.
dprop : Propagation delay is a time takes a packet travels on the link from source to destination. This depends on the physical characteristics of the link. Typically measured in millisecond (e.g. ~2x108 m/ sec).

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Q15: (26 pts) Mehmet attaches his laptop to campus network with wired connection, opens his browser and requests/receives www.google.com. Please write/draw/explain all steps that Mehmet will go through to see google's web page in his browser (remember day in life scenario slides).

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