

National University of Computer and Emerging Sciences, Lahore Campus
Quiz3 [BS(CS): Section C] Fall 2022

Computer Networks (Code: CS3001)

Quiz Date: October 24, 2022

Total Marks: 10

Duration: 15 -Minutes

Name ----- Roll #----- Section -----

Instructions: Attempt all questions on this sheet. You can make use of rough sheet (do not attach to this sheet).

Q1: Encircle the correct option(s):

(4 Marks)

CLO 1

(i) Length field of UDP segment indicates the length of -----.

A. UDP header B. UDP payload C. TCP header **D. None of these**

(ii) Urg data pointer field in TCP segment consists of _____ bits.

A. 8 **B. 16** C. 4 D. 1

(iii) Sequence number field in TCP segment consists of _____ byte(s).

A. 16 **B. 32** C. 8 D. 1

(iv) When out-of-order segment arrives, TCP receiver immediately -----.

A. discards it B. sends an ACK **C. sends duplicate ACK**

Q2: Host A and B are communicating over a TCP connection, and Host B has already received from A all bytes up through byte 126. Suppose Host A then sends two segments to Host B back-to-back. The first and second segments contain 80 and 40 bytes of data, respectively. Host B sends an acknowledgment whenever it receives a segment from Host A. In the first segment, the sequence number is 127, the source port number is 302, and the destination port number is 80. Host B sends an acknowledgment whenever it receives a segment from Host A. Show necessary working **(2+2+2 = 6 Marks)** **CLO 4**

- a. What is the sequence number and destination port number in the second segment sent from Host A to B?
 - b. If the first segment arrives before the second segment, then, in the acknowledgment of the first arriving segment by host B to A, what will be the acknowledgment number and the destination port number?
 - c. If the second segment arrives before the first segment, then, in the acknowledgment of this received segment, what will be the acknowledgment number and source port number?
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Start writing your Answer to Q2 from here and then use backside of this sheet.

Q2 Solution:

a. Sequence number in second segment = Sequence number in first segment + 80 = 127 + 80 = 207

Destination port number= 80

b. ACK number= 207

Destination port number= 302

c. ACK number= 127

Destination port number= 80