ITS413 – Quiz 4 Answers

Name:

ID:

Mark: _____ (out of 10)

Question 1 [8 marks]

True or false (circle the most accurate answer for the statement):

b) In the Internetc) In the Internet	t, congestion mainly occurs at hosts. t, congestion mainly occurs at routers. t, congestion mainly occurs at TCP destinat t, congestion mainly occurs at TCP destinat		FALSE FALSE FALSE FALSE	
 e) Increased congestion in the Internet leads to increased queuing delays at routers. TRUE FALSE 				
TRUE		•		
full.	not received when expected, a TCP source a	TRUE	FALSE	
h) If an ACK is r the network.	not received when expected, a TCP source a	assumes congestion is TRUE	increasing in FALSE	
j) TCP is a connk) TCP is a conn	nts error control, flow control and congesti ection-less protocol. ection-oriented protocol. ection-oriented protocol.	on control. TRUE TRUE TRUE TRUE	FALSE FALSE FALSE FALSE	
overflowed with n) Flow control i	involves limiting the sending rate of a TCP ith packets. involves limiting the sending rate of a TCP not overflowed.	TRUE	FALSE	
o) Flow control i amongst appli	involves limiting the sending rate of a TCP ications. involves limiting the sending rate of a TCP	source so that fairness TRUE	is achieved FALSE	
Window and C	f outstanding bytes a TCP source may have Congestion Window. TRUE	FALSE		
Window and C	of outstanding bytes a TCP source may have Congestion Window. TRUE of outstanding bytes a TCP source may have TRUE	FALSE		
	f outstanding bytes a TCP source may have TRUE		Congestion	

- u) If the buffer size of a router is finite, then packets will be dropped by the router if the total incoming data rate of its links is larger than the total outgoing data rate of its links.
 TRUE FALSE
- v) If the buffer size of a router is finite, then packets will be dropped by the router if the total incoming data rate of its links is smaller than the total outgoing data rate of its links. TRUE FALSE
- w) If the buffer size of a router is infinite, then packets will be dropped by the router if the total incoming data rate of its links is larger than the total outgoing data rate of its links. TRUE FALSE
- x) If the buffer size of a router is infinite, then packet delay at the router will tend to infinity if if the total incoming data rate of its links is larger than the total outgoing data rate of its links. TRUE FALSE
- y) End-to-end congestion control involves routers sending feedback packets to hosts. TRUE FALSE
- z) Network-assisted congestion control does not involve routers. TRUE FALSE
- aa) End-to-end congestion control does not require explicit feedback from routers. **TRUE** FALSE
- ab) TCP uses network-assisted congestion control. TRUE FALSE
- ac) For congestion control, TCP assumes the source sending rate is inversely proportional to the Congestion Window size. TRUE **FALSE**
- ad) For congestion control, TCP assumes the source sending rate is proportional to the Congestion Window size. **TRUE** FALSE
- ae) For congestion control, TCP assumes the source sending rate is proportional to the RTT. TRUE **FALSE**
- af) For congestion control, TCP assumes the source sending rate is inversely proportional to the RTT. **TRUE** FALSE

Question 2 [2 marks]

For the descriptions in parts (a) to (d) , select one from the 6 mechanisms/parameters that is most closely related. [$\frac{1}{2}$ mark for each]

Additive Increase	Multiplicative Decrease	Congestion Window
Slow Start Phase	Maximum Segment Size	Advertised Window

- b) Fast increase in sending ratec) Response when congestion is detected
 - d) Limits the sending rate to avoid congestion

a) Slow increase in sending rate

Answer

Slow increase in sending rate: Additive Increase Fast increase in sending rate: Slow Start Phase Response when congestion is detected: Multiplicative Decrease Limits the sendign rate to avoid congestion: Congestion Window