

Q1. What is bandwidth? (Choix unique)

Answer 1: Data rate of network link or path

Answer 2: Networking capability

Answer 3: Bandlength

Q2. Given an Ethernet link with a 100Mbps nominal capacity, what is the IP link capacity for the maximum packet size? (Choix unique) [Refer to Lecture 4 - Slide 7]

Answer 1: 97.5 Mbps

Answer 2: 100 Mbps

Answer 3: 50 Mbps

Q3. What is the end-to-end capacity in this example? (Choix unique) [Refer to Slide 13]

Answer 1: 100 Mbps

Answer 2: 30 Mbps

Answer 3: 130 Mbps

Q4. What is the end-to-end available bandwidth in this example? (Choix unique) [Refer to Slide 17]

Answer 1: 20 Mbps

Answer 2: 27 Mbps

Answer 3: 47 Mbps

Q5. True or False: Bulk transfer capacity can be measured using a TCP or a UDP flow (Choix unique)

Answer 1: True

Answer 2: False

Q6. 1. Identify the correct statement: (Choix unique)

Answer 1: Using a single TCP connection is enough to measure available bandwidth

Answer 2: The best practice to measuring available bandwidth is to use a UDP flow and setting the sending rate to the highest possible value

Answer 3: Measuring available bandwidth using UDP can lead to a bias due to congestion control and flow control

Answer 4: None of the above

Q7. [Refer to slide 36]

a. What transport protocol is used in this example? (Choix unique)

Answer 1: TCP

Answer 2: UDP

b. What parameters are set to conduct this measurement? (Choix unique)

Answer 1: Sending rate of 100 Mbps for a duration of 10 seconds

Answer 2: Sending rate of 10 Mbps for a duration of 100 seconds

c. What is the available bandwidth of the measured path in the first second? (Choix unique)

Answer 1: 90.2 Mbps

Answer 2: 59.2 Mbps

Q8. A user attempts to measure the capacity of a path using packet-pair method. When the probes are sent 4 ms apart, the packets inter-packets gap (IPG) is 4 ms, whereas when the probes are sent 2 ms apart, the IPG is 3 ms; What is the path capacity? (Choix unique)

Answer 1: 3 Mbps

Answer 2: 4 Mbps

Answer 3: Hard to tell since the IPG keeps changing!

Q9. How long does it take to push the last bit of the first probe onto the bottleneck link? (Choix unique) [Refer to slide 40]

Answer 1: 0.5 ms

Answer 2: 1.2 ms

Answer 3: 4 ms

Q10. Where is α in this graph? (Choix unique)

Answer 1: Alfa is the y-value when $L=0$

Answer 2: Cannot be determined from this graph because alfa is independent of the packet size

Answer 3: Alfa can be deduced by computing $1-\text{Beta}$