

Subject: Computer Networks

Score:

1. How long does it take a packet of length 1,000 bytes to propagate over a link of distance 2,500 km, propagation speed 2.5×10^8 m/s, and transmission rate 2 Mbps? (Please include unit in answer)

Answer: _____

2. Suppose Host A wants to send a large file to Host B. The path from Host A to Host B has three links, of rates $R_1 = 500$ kbps, $R_2 = 2$ Mbps, and $R_3 = 1$ Mbps.

a. Assuming no other traffic in the network, which is the bottleneck link?

b. Suppose the file is 4 Mbytes. Dividing the file size by the bottleneck link, roughly how long will it take to transfer the file to Host B?

c. Repeat (a) and (b), but now with R_2 reduced to 100 kbps.

Answer: 1) _____ 2) _____ seconds. 3) _____ seconds.

3. Worms need a host file to exploit system. (True/False) : _____

4. Which of the following is suitable for sending data in form of light(photons)?

a) Coaxial cable

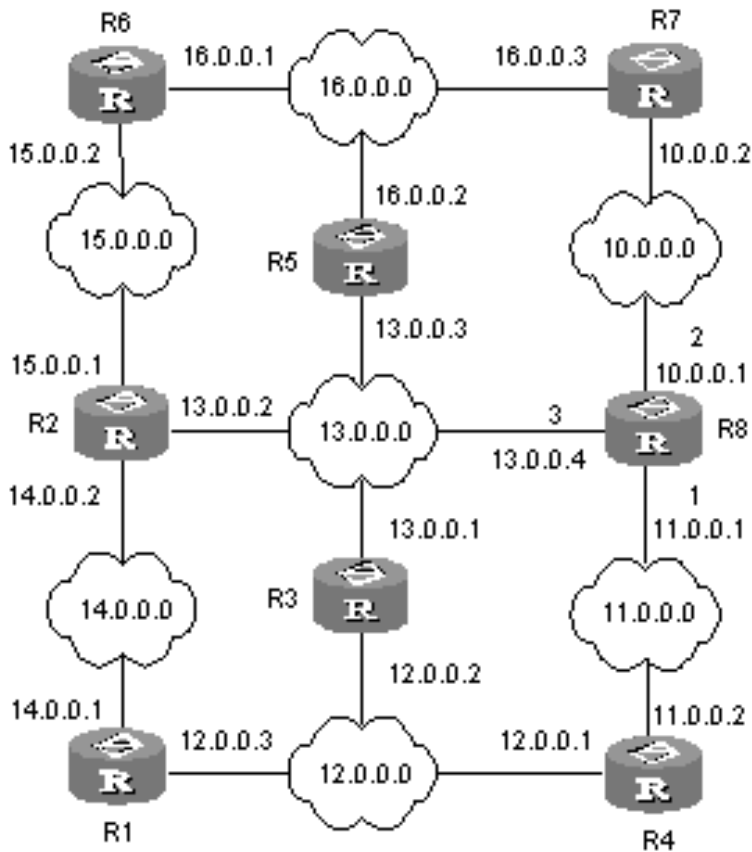
b) Twisted pair cable

c) Antenna

d) Fiber optic cable

5. "HTTP response messages never have an empty body". (True/False): _____

6.



Routing table of router R8

Destination network	Next hop	Interface
10.0.0.0	10.0.0.1	2
11.0.0.0	11.0.0.1	1
12.0.0.0	11.0.0.2	1
13.0.0.0	13.0.0.4	3
14.0.0.0	13.0.0.2	3
15.0.0.0	13.0.0.2	3
16.0.0.0	10.0.0.2	2

Based on routing table, packet is sent via interface #_____ if the destination IP is 16.0.0.25

7. Which of the following guarantees a specific bandwidth in a connection?

- a) Packet Switching
- b) Circuit Switching
- c) Vanilla TCP
- d) TCP CUBIC

8. Name 2 common philosophies CDNs adopt for different server placement.

Answer: _____, _____

9. Which of the following HTTP response code means the requested object is moved to a different location?

- a) 301
- b) 200
- c) 505
- d) 400

10. Which of the following is the centerpiece in 'Conditional GET' method used in web caching?

- a) If-None-Match
- b) If-Modified-Since
- c) Accept-Encoding
- d) Content-Type

11. ".org" falls under which of the following domain categories?

- a) Local
- b) root
- c) Authoritative
- d) Top-Level Domain (TLD)

12. If the TCP server were to support 'n' simultaneous connections, each from a different client host, how many sockets would the TCP server need? (Hint: Welcoming socket concept)

Answer: _____

13. Host A is sending Host B a large file over a TCP connection. Assume Host B has no data to send Host A. Host B will not send acknowledgments to Host A because Host B cannot piggyback the acknowledgments on data. (True/False) _____

14. what does '*' in below 'tracert' result mean?

24 ms 24 ms 24 ms 154. 11. 2. 81

24 ms 23 ms 23 ms ae-9. a03. sttlwa01. us. bb. gin. ntt. net [168. 143. 191. 134]

34 ms * 24 ms ae-3. r25. sttlwa01. us. bb. gin. ntt. net [129. 250. 2. 206]

Answer: _____

15. Suppose a process in Host C has a TCP socket with port number 6789. Suppose both Host A and Host B each send a TCP segment to Host C with destination port number 6789. Both of these segments be directed to the same socket at Host C. (True/False): _____

16. In rdt protocol(one that we made similar to TCP), we introduced the concept of timer to handle :

- a) Error
- b) Sequence number
- c) Duplicate Packet
- d) Packet loss

17. Suppose you have the following three bytes: 01010011, 01100110, 01110100. What is the checksum(1s complement) of the sum of these bytes? _____

ROUGH WORK