STUDENT NO:

NAME-SURNAME

2014-2015 Computer Networks and Technologies
Midterm Exam
03.04.2015 – 13:45 – Duration 50 minutes.

1. According to the internet architecture, the network is divided into three main parts: ......, edge network and ......
Which pair completes the previous sentence best?
   a) Hosts – core network
   b) Client –server
   c) Peer-peer
   d) TCP -IP

2. A circuit-switched network can guarantee a certain amount of end-to-end .... for the duration of a call.
   a) Circuits
   b) Packets
   c) Buffers
   d) Bandwidth

3. In Internet architecture, when one side of the connection doesn't receive an acknowledgement for a packet it transmitted, ...
   a) It waits for a predefined time to close the connection.
   b) It waits for an RTT to close the connection.
   c) It retransmits the packet.
   d) It ignores the problem and leave it to the upper layers.

4. Public Switched Telephone Networks (PSTN) can be considered as an example of .... networks. Complete the sentence with one of the following words:
   a) Packet Switched
   b) Circuit Switched
   c) Connectionless
   d) Connection-Oriented

5. The .... for a link is equal to the number of bits in the packet divided by the transmission rate of the link. It is the amount of time it takes to push the packet onto the link.
   a) Propagation delay
   b) End-to-end delay
   c) Transmission delay
   d) Processing delay

6. A router processes up to which layer?

   a) Application
   b) Network
   c) Data Link
   d) Transport

7. In half-duplex communication transmission takes place: ....
   a) In one direction only
   b) In one direction at half the speed
   c) Only in one direction at a time
   d) In two directions simultaneously

8. What is a set of agreed-upon (agreed on before) instructions designed to allow computers to communicate to each other across a network connection?
   a) protocol
   b) checksum
   c) technology
   d) port

9. Which one is not true for FTP connections?
   a) FTP uses two parallel TCP connections
   b) In FTP connections, the control information is not sent over the same connection that the file is sent over
   c) FTP sends control information out of band
   d) FTP sends control information inband

10. What is the order of visited DNS servers in case of an iterative query?
   a) Local DNS-Root DNS-Local DNS-TLD DNS-Local DNS-Authoritative DNS-Local DNS
   b) Local DNS-Root DNS-TLD DNS-Authoritative DNS-TLD DNS-Root DNS-Local DNS
   c) Local DNS-Root DNS-TLD DNS-Authoritative DNS-Local DNS
   d) Local DNS-Root DNS-Local DNS-TLD DNS-Local DNS-Authoritative DNS

11. Which one is an example of P2P application?
   a) Ordering books online.
   b) Filling tax forms electronically.
   c) Downloading a file from a library.
   d) File sharing

12. Which one is not a service provided by DNS server?
   a) Host Aliasing
   b) Mail server aliasing
   c) Load distribution
   d) Authentication

13. The transfer of an html file from one host to another is.....
   a) loss-intolerant and time sensitive
   b) loss-tolerant and time sensitive
   c) loss-intolerant and time insensitive
   d) none of the above

14. When a TCP segment arrives to a host, the socket to which the segment is directed depends on ....
   a) the source port number
   b) the destination port number
   c) the source IP address of the datagram that encapsulated the segment
   d) all of the above

15. Port numbers in the range from 0 to 1023 are known as:
   a) Well-known ports
   b) System ports
   c) Dynamic ports
   d) Static ports

16. For BitTorrent, which of the following is true?

a)   At a given instant of time, a peer A may upload to a peer B, even if peer B is not sending anything to A.

b)   Although a peer may have 50 concurrent TCP connections with other peers, at any given instant of time it sends data to less than 10 other peers.

c)   Among the chunks that a peer does not have, the peer will request chunks that appear to be relatively rare in the torrent.

d)   All of the above.

17. In BitTorrent, for every 10 seconds, a peer calculates its top 4 peers to determine the peer set to send chunks. These set of peers are called .... peers.

a)unchoked   b)leech

c)choked   d)feed

For questions 18 and 19, Assume there is an html file containing 7 jpeg images. Also assume file sizes are equal for each object.

18. Assume nonpersistent http. What is the total delay in terms of RTT.

a)   10 RTT + 8 Transmission Time

b)   12 RTT + 7 Tranmission Time

c)   14 RTT + 7 Tranmssion Time

d)   16 RTT + 8 Tranamission Time

19. Assume persistent http without pipelining. What is the total delay in terms of RTT.

a)   10 RTT + 8 Transmission Time

b)   9 RTT + 8 Tranmission Time

c)   8 RTT + 8 Tranmssion Time

d)   7 RTT + 8 Tranmission Time

20. What mathematical function is performed on data to ensure that it has not been changed or corrupted?

a) sum

b) bit stuffing

c) checksum

d) hash

21. Which connection-oriented protocol ensures that data gets its final destination?

a) TCP

b) SNMP

c) UDP

d) ICMP

For questions 22 and 23 use the following scenario: 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 R1=500 kbytes, R2= 2 Mbps, and R3=1 Mbps.

22. Assuming no other traffic in the network, what is the throughput for the file transfer?

a) 500 kbps   b) 2 Mbps

b) 1 Mbps   d) 1166 kbps

23. Suppose the file is 4 million bytes. Roughly, how long will it take to transefer the file to Host B?

a) 8 sec.

b) 2 sec

c) 4 sec

d) 3.5 sec

24. Which one is not a pipelined protocol?

a)   Go-back-n

b)   Stop and wait

c)   Selective repeat

d)   None of the above

25. What is not true for pipelining?

a)   Sender allows multiple packets to be send simultaneously

b)   A range of sequence numbers is required

c)   No buffering is required

d)   Buffering at sender and / or receiver is required

ANSWER SHEET

1	A	B	C	D
2	A	B	C	D
3	A	B	C	D
4	A	B	C	D
5	A	B	C	D
6	A	B	C	D
7	A	B	C	D
8	A	B	C	D
9	A	B	C	D
10	A	B	C	D
11	A	B	C	D
12	A	B	C	D
13	A	B	C	D
14	A	B	C	D
15	A	B	C	D
16	A	B	C	D
17	A	B	C	D
18	A	B	C	D
19	A	B	C	D
20	A	B	C	D
21	A	B	C	D
22	A	B	C	D
23	A	B	C	D
24	A	B	C	D
25	A	B	C	D