UCLM
UNIVERSIDAD DE CASTILLA-LA MANCHA

Computer Networks II

Test 2 (extra)

Escuela Superior de Informática

calificación

This test consists of 16 question totalling 35 points. The maximum duration is 45 minutes. Two wrong answers substract a point. Only an answer if correct if otherwise not stated. Calculator use is forbidden. Write legibly and similar to the size of the printed text using only the reserved space.

Apellidos: SOLUCIÓN Nombre: _____ Grupo: _____

1. (2p) Which of the following is NOT a mechanism related to congestion?
   - ☐ **a)** Frame Relay FECN.
   - ☐ **b)** Slow start.
   - ■ **c)** Sliding window.
   - ☐ **d)** Packet discarding policy.

2. (2p) Why the *port redirection* is required when a router with NAPT is used?
   - ■ **a)** To get LAN servers be accessible from the public network.
   - ☐ **b)** Because the NAPT table can not include the private network ports.
   - ☐ **c)** The *port forwarding* has no relation to NATP.
   - ☐ **d)** To avoid connections to the outside by LAN users.

3. (2p) What refer the acronym AAA, in relation to the network remote access?
   - ☐ **a)** Authentication, Authorization and Automation.
   - ☐ **b)** Authentication, Access and Logging.
   - ■ **c)** Authentication, Authorization and Accounting.
   - ☐ **d)** Authorization, Encription and Privacy.

4. (2p) PPTP y L2TP...
   - ■ **a)** ... provide encapsulation mechanisms over tunnels.
   - ☐ **b)** ... are encription algorithms for application layer messages.
   - ☐ **c)** ... are secure transport protocols.
   - ☐ **d)** ... bear no resemblance.

5. (4p) What is the content of the NAPT table?

   Each entry contains data for an individual connection. Although there are some variations, the usual fields are: protocol, in-site (LAN) host IP address (private) and source port, destination IP address (public) and destination port.

6. (2p) Which of the following is NOT a mechanism related to flow control?
   - ☐ **a)** TCP receiving window.
   - ☐ **b)** Persistence timer.
   - ■ **c)** Additive increase.
   - ☐ **d)** Nagle algorithm.

7. (2p) How does TCP determine the value of the retransmission timer?
   - ☐ **a)** Randomly.
   - ☐ **b)** By measuring the delay through a ping message.
   - ■ **c)** By measuring the delay in the arrival of the ACK.
   - ☐ **d)** The receiver explicitly notifies it.

8. (2p) Which of the following is not a reason for TCP to modify the value of the field *sequence number* of a header?
   - ☐ **a)** When the flag SYN is active.
   - ☐ **b)** When the flag FIN is active.
   - ■ **c)** When the flag ACK is active.
   - ☐ **d)** When the segments contains a payload.

9. (3p) What is the purpose of the *Keep Alive* timer?

   Determine whether a connection without activity (without traffic) is still active, ie: if the client is willing to participate in the communication. The server restarts this timer with each incoming client message. If the timer expires, server sends test messages to force a client reply. If no answer is received, the server closes the connection.

10. (2p) The host B sends a segment to host A with ACK=2000, but it was lost, immediately B sends another one with value 3000.
    - ☐ **a**) Host A asks for a lost ACK retransmission.
    - ☐ **b**) Host A retransmits the segment corresponding to the ACK 2000.
    - ■ **c**) None of the other.
    - ☐ **d**) Host A performs a *fast retransmission*.

11. (2p) What is the technique of *split horizon*?
    - ■ **a**) The router A do not send to B nothing about neighbors if it comes from B.
    - ☐ **b**) Routers A and B do not share information about the cost of their links if they have some common neighbor.
    - ☐ **c**) The router A report cost 0 to B if it have an alternative route to it.
    - ☐ **d**) Routers A and B deactivate their redundant links to prevent loops.

12. (2p) What is the goal of the dynamic routing protocols?
    - ■ **a**) Recalculate the routing tables of the routers as subnet conditions change.
    - ☐ **b**) Coordinate routers to avoid congestion.
    - ☐ **c**) Generate topology maps for the ISP network management tools.
    - ☐ **d**) To get latency, delay and performance measures of the subnet.

13. (2p) The algorithms distance-vector and link-state differ in that:
    - ☐ **a**) The distance vector only calculates symmetrical routes and link status can calculate asymmetric routes.
    - ☐ **b**) The distance vector can not adapt to changes in the topology, but the link state does.
    - ☐ **c**) The distance vector can not use such complex metrics such as link status.
    - ■ **d**) The distance vector gives less information about the route that the link status.

14. (2p) The *optimization principle* states that:
    - ☐ **a**) Whatever the route calculation, there is always an optimal path.
    - ☐ **b**) If the optimal path A-B and B-C is known the optimal path A-C is the concatenation from both.
    - ■ **c**) If the path A-C goes through B, then calculating the optimal path A-C, the optimal path B-C is known.
    - ☐ **d**) The optimal path A-C is the reverse optimal path C-A.

15. (2p) What protocol is used for routing between *autonomous systems*?
    - ☐ **a**) RIP
    - ■ **b**) BGP
    - ☐ **c**) OSPF
    - ☐ **d**) EIGRP

16. (2p) What does a host when it receives an IP packet an its destination address does not match the assigned to that interface? And a router?

    A conventional host discards the packet.
    A router checks its routing table and tries to forward it.