Thesis (example)

1. One of the basic principles of cellular networks is:
    a. Frequency reuse
    b. User positioning
    c. Increasing network traffic capacity
    d. Hand-over
2. The maximum number of simultaneous voice communications sustained by a cellular network with 15 cells organized in 3 clusters and having a total of 40 channels is:
    a. 40
    b. 45
    c. 120
    d. 600
3. The data cyphering key Kc in GSM changes:
    a. At a frame beginning
    b. At a hyper-frame beginning
    c. At a call beginning
    d. When entering a roaming area
4. The ordering number in a hyper-frame of a broadcast channel (BCCH) slot in GSM is 802. The next slot of the same channel has the ordering number:
    a. 803
    b. 810
    c. 828
    d. 853
5. The number of slots in a GPRS complex multi-frame is:
    a. 26
    b. 52
    c. 208
    d. 416
6. The site selection diversity transmit mode is used in UMTS networks:
    a. On the downlink
    b. On the uplink
    c. On both of the links
    d. Only in UMTS networks with HSPA
7. In LTE networks, on the downlink, the number of OFDMA symbols transmitted in a sub-frame is:
    a. 6
    b. 14
    c. 12 or 14
    d. 6 or 7
8. In LTE-A networks, the primary component in a group of aggregated carriers differs from the secondary components in the group by:
    a. Transmitting only control data
    b. Transmitting user and control data
    c. Being allocated in the user primary cell
    d. Having the greatest bandwidth
9. The length of the cyclic prefix in OFDM technique must be chosen based on the value of:
    a. OFDM symbol length
    b. Delay spread
    c. Doppler spread
    d. Channel transmission rate

*Each correct answer receives **1 point**. One point is awarded automatically to the total score.*

This example is built such that an average prepared student can solve it in maximum 30 minutes, without accessing Lecture Notes.