

Review Exercises

Chapter 2

1. What are the four major functional building blocks in the core network of 3GPP Release 5?
2. What are *GERAN* and *UTRAN* in 3GPP? What are the major components in GERAN and UTRAN?
3. Draw a picture to show the functional architecture of a User Equipment (UE) in 3GPP.
4. In 3GPP Release 5, it allows the switching and call control functions of an MSC to be separated and implemented on separate network entities. Describe how it is done and what are the benefits.
5. In 3GPP PS CN, how IP is used between SGSN and GGSN, and between GGSN and external IP networks?
6. What are *A/G_b* mode and *I_u* mode in 3GPP Release 5?
7. Draw a picture to show the 3GPP bears for supporting packet-switched services between UE and GGSN.
8. A PDP context can be in either *ACTIVE* or *INACTIVE* state. Describe the major differences between ACTIVE and INACTIVE states.
9. What are the three major phases to access the 3GPP PS CN and services?
10. What is the major difference between *GPRS Attach* and *IMSI Attach*?
11. What are the main functions of *GPRS Tunneling Protocol (GTP)*?
12. Draw a picture to show the *user plan* and *control plan* of G_n interface.
13. What are the major functions of the *Packet Data Convergence Protocol (PDCP)*?
14. What are *transparent access* and *non-transparent access* for accessing IP networks through the 3GPP PS CN?
15. Draw a picture to show the functional architecture of 3GPP2 packet network.
16. What are *Simple IP Access* and *Mobile IP Access* in 3GPP2 packet network?
17. Briefly describe the procedures to access to a 3GPP2 packet network when using MIPv4.
18. In 3GPP2 packet network, PPP is maintained between PDSN and mobile station. When a mobile station moves to a new BSC or PCF but within the same PDSN, why there is no need to reestablish the PPP session? Why the PPP session will not break?
19. Compare the network architectures defined by 3GPP and 3GPP2. List the differences and similarities.