Practice Exam Questions for: Nokia Bell Labs Foundation Exam (exam number: BL0-100)

The following questions will test your knowledge and prepare you for the Nokia Bell Labs Foundation Exam. Compare your responses with the Answer Key at the end of the document.

1. Which of the following statements about Network Slicing are correct? (Select 2)
    a. A 4G-based core network allows a few network slices mainly based on dedicated core elements and specific radio and transport bearers.
    b. A 5G-based core network allows a virtually unlimited number of network slices, based on dedicated elements and shared portion of network with specific Quality of Services.
    c. A 4G based core network allows up to 8 network slice connections per User Equipment at a given time.
    d. A 5G based core network allows a virtually unlimited number of network slice connections per User Equipment at a given time.

2. Which of the following statements are applicable to the technology of massive MIMO? (Select 3)
    a. Several data flows are sent at the same time on the same frequency.
    b. The signals on each antenna are made orthogonal.
    c. The data flows are sent at the same time on different frequencies.
    d. Transmit diversity is used in case of poor radio conditions.

3. Which factors enable Network Slicing automation? (Select 3)
    a. High speed connectivity
    b. Artificial intelligence
    c. Machine learning
    d. Network data analytics

4. Which of the following is not a 5G Transport component?
   a. Access Backhaul
   b. Regional Core
   c. Backbone Core
   d. Sidehaul Edge

5. An industry player wants to deploy its own cloud by using a webscale service provider's infrastructure. What type of cloud is this?
   a. Private
   b. Edge
   c. Hybrid
   d. Public

6. Which of the following enables 5G to have the capacity for adaptation? (Select 3)
   a. Control / User Plane separation and the distributed UPF.
   b. Network Slicing feature and the Network Slice Selection Function (NSSF).
   c. Service Based Architecture (SBA) and the Network Exposure Function.
   d. Stateful Network Repository Function (NRF).

7. What is the Network Exposure Function (NEF)?
   a. This network function stores or retrieves subscriptions, profiles and authentication data to or from the Data Repositories. It offers services to the AMF, SMF, NEF, and AUSF using the Service Based Interface.
   b. This network function exposes 5G Core Network functionalities available to 3rd parties, so that 3rd party capabilities and events may be securely exposed by the Network Exposure Function (NEF).
   c. This network function supports authentication for 3GPP and non-3GPP accesses.
   d. This network function is used for Network Slicing. It determines the allowed slices and selects the AMF for the User Equipment. It is an important function new with 5G, not present in EPC.

8. Which of the following factors makes security such a major issue for 5G? (Select 3)
   a. Massive amount of connected devices
   b. Software-based technologies
   c. Highly sensitive applications, such as distant surgery
   d. Massive Broadband with applications such as Virtual Reality

9. Which definition is NOT correct?
   a. Massive MIMO enhances throughput and works best with 3-6 GHz band
   b. Beamforming reduces interferences and works best with mmWave band
   c. Massive MIMO increases link reliability
   d. Transmit Diversity increases link reliability

10. Which of the following statement is NOT applicable to the technology of massive MIMO?
    a. Several data flows are sent at the same time on the same frequency.
    b. The signals on each antenna are made orthogonal.
    c. The data flows are sent at the same time on different frequencies.
    d. Transmit diversity is used in case of poor radio conditions.

11. What capabilities CANNOT be met with today's (R15) 5G network?
    a. 1 Mbps Peak, 10 ms latency, 99% Service availability
    b. 20 ms latency, $10 Unit Cost , 1 year battery
    c. 1 Mbps Peak, 20 ms latency, 99% reliability
    d. 1 Mbps Peak, 1 ms latency, 99.9999% reliability

12. What are the identified needs for Industry 4.0?
    a. End-to-End Latency ~1 ms; Reliability 6 - 9s & Communication Service Availability > 8s
    b. End-to-End Latency ~0.1 ms; Reliability 8 - 9s & Communication Service Availability > 9s
    c. End-to-End Latency ~10 ms; Reliability 4 - 9s & Communication Service Availability > 6s

13. 5G NR Multi-connectivity aggregates which of the following carriers?
    a. 5G, 4G, 3G and WiFi carriers
    b. 5G, 4G, 3G and 2G carriers
    c. 5G, 4G and WiFi carriers
    d. 5G, 4G, 3G, 2G and WiFi carriers

14. In which 3GPP release is the first usage of millimeter waves with FR2 (24.250 GHz – 52.600 GHz)?
    a. R14
    b. R15
    c. R16
    d. R17

15. True or False? Shorter TTI enhances network reliability
    a. True
    b. False

16. What is the benefit of separating the control plane and the user plane in 5G Core?
    a. It leads to less complexity in the core network.
    b. It enables the utilization of edge cloud for certain applications.
    c. It makes network troubleshoot issue resolution easier.
    d. It is beneficial for charging, as mostly user plane is the traffic to be charged.

17. Which key technology enabler matches the description? Eliminates formally defined point-to-point interfaces
    a. Control & User Plane separation
    b. Service based architecture
    c. Stateless

18. Which of the following is NOT a 5G Transport requirement for expected performance?
    a. Reduction in number of node deployments
    b. Cell density increases
    c. Traffic growth and increased performance
    d. Latency decreases

Answer Key

1. AB

2. ABD

3. BCD

4. D

5. D

6. ABC

7. B

8. ABC

9. C

10. C

11. D

12. A

13. C

14. B

15. A

16. B

17. B

18. A