1. What is the primary objective of extending 4G D2D standardization to 5G?

a) To increase latency in communication
b) To enhance network capacity and efficiency
c) To decrease device compatibility
d) To limit coverage range

Answer: b) To enhance network capacity and efficiency

Explanation: Extending D2D standardization to 5G aims to improve network performance by increasing capacity and efficiency through direct communication between devices, reducing the load on the cellular network.

2. Which type of communication allows devices to communicate directly without the need for intermediate infrastructure?

a) Device-to-Cloud (D2C)
b) Device-to-Device (D2D)
c) Machine-to-Cloud (M2C)
d) Machine-to-Machine (M2M)

Answer: b) Device-to-Device (D2D)

Explanation: D2D communication enables devices to communicate directly with each other without relying on intermediate infrastructure such as base stations or cloud servers.

3. What aspect of mobile broadband D2D requires efficient management of radio resources?

a) Device compatibility
b) Data encryption
c) Spectrum allocation
d) Battery life

Answer: c) Spectrum allocation

Explanation: Efficient radio resource management is crucial for mobile broadband D2D, particularly in allocating spectrum to ensure interference-free communication between devices.

4. In D2D communications, what does multi-hop refer to?

a) Communication between multiple devices simultaneously
b) Direct communication between two devices
c) Communication relayed through intermediate devices
d) Communication with low latency

Answer: c) Communication relayed through intermediate devices

Explanation: Multi-hop in D2D communications involves data transmission relayed through intermediate devices, enabling communication between devices that are not directly within range of each other.

5. Which of the following is a benefit of multi-operator D2D communications?

a) Reduced network congestion
b) Increased dependency on a single operator

c) Limited coverage range
d) Higher latency

Answer: a) Reduced network congestion

Explanation: Multi-operator D2D communications can alleviate network congestion by allowing devices to communicate directly with each other across different operator networks, reducing reliance on centralized infrastructure.

6. What is the primary advantage of D2D communication compared to traditional cellular communication?

a) Higher latency
b) Lower network capacity
c) Reduced power consumption
d) Limited coverage range

Answer: c) Reduced power consumption

Explanation: D2D communication typically consumes less power than traditional cellular communication since it bypasses the need for data transmission through centralized base stations.

7. Which aspect of D2D communication is crucial for enabling proximity-based services and applications?

a) Latency
b) Battery life

c) Device compatibility
d) Location awareness

Answer: d) Location awareness

Explanation: Location awareness is essential for D2D communication to support proximity-based services and applications, allowing devices to identify nearby peers for direct communication.

8. What role does radio resource management play in mobile broadband D2D?

a) Allocating spectrum efficiently
b) Enhancing device security
c) Extending coverage range
d) Increasing data encryption

Answer: a) Allocating spectrum efficiently

Explanation: Radio resource management in mobile broadband D2D involves allocating spectrum efficiently to ensure optimal utilization and minimize interference between devices.

9. Which of the following is a challenge in implementing multi-hop D2D communications?

a) Lower latency
b) Increased network capacity
c) Signal interference
d) Extended coverage range

Answer: c) Signal interference

Explanation: Signal interference can be a challenge in multi-hop D2D communications as data transmission relayed through multiple devices may encounter interference, affecting communication reliability.

10. What distinguishes M2M communication from D2D communication?

a) M2M requires human intervention
b) D2D relies on cloud servers
c) M2M involves communication between machines
d) D2D is limited to single-hop communication

Answer: c) M2M involves communication between machines

Explanation: M2M communication involves direct communication between machines, whereas D2D communication involves direct communication between devices, which can include both machines and human-operated devices.