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Grade received 100% To pass 80% or higher

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Quiz: Module 5

Latest Submission Grade 100%

1. What is the most fundamental characteristic of Massive MIMO? **1 / 1 point**

- (●) A: M-MIMO utilizes a significantly higher number of antennas at the cell site
- ( ) B: M-MIMO increases the number of core network elements
- ( ) C: M-MIMO increases the operator's available spectrum
- ( ) D: M-MIMO increases latency

Correct
Congratulations! Choice (A) is the correct response. M-MIIMO utilizes a significantly higher number of antennas at the cell site.

2. **2 / 2 points**

Which of the following are true about M-MIMO? (select all that apply)

- [x] A: Performance can be enhanced in both Sub-6 GHz and mmWave bands when M-MIMO is used

Correct
Congratulations! Choices (A and C) are the correct responses. Performance can be enhanced when M-MIMO is used in both Sub6 and mmWave deployments. M-MIMO also helps compensate for path loss in mmWave bands.

- [ ] B: M-MIMO can only be used with mmWave deployments
- [x] C: M-MIMO helps compensate for path loss in mmWave bands

Correct
Congratulations! Choices (A and C) are the correct responses. Performance can be enhanced when M-MIMO is used in both Sub6 and mmWave deployments. M-MIMO also helps compensate for path loss in mmWave bands.

- [ ] D: Small cells must be used when deploying Massive MIMO

3. Beamforming can work on both mobile devices and base stations **1 / 1 point**

- (●) A: True
- ( ) B: False

Correct

4. Which of the following enables M-MIMO to send radio transmissions further and increase coverage? **2 / 2 points**

- (●) A: Beamforming
- ( ) B: mmWave spectrum
- ( ) C: Path loss
- ( ) D: Higher cell density

Correct
Congratulations! Choice (A) is the correct response. M-MIMO can use beamforming effectively and that

helps extend the distance that radio transmissions can travel.

5. Which of the following are true about 3D beamforming? **2 / 2 points**

- ○ A: Horizontal beamforming is sufficient for 3D coverage
- ○ B: Vertical beamforming is sufficient for 3D coverage
- ◉ C: Both horizontal and vertical beamforming are required for 3D coverage
- ○ D: Horizontal beamforming is not required for 3D coverage

Correct
Congratulations! Choice (C) is the correct response. Both horizontal and vertical beamforming are required for 3D coverage.

6. What is the purpose of beam sweeping? **2 / 2 points**

- ○ A: To elongate the beam even further than beamforming alone
- ◉ B: To cover a wider area despite using narrow individual beams
- ○ C: To increase the width of the beam
- ○ D: To increase transmission power

Correct
Congratulations! Choice (B) is the correct response. Beam sweeping helps narrow beams reach a wider area efficiently.

7. Select the benefits of Massive MIMO: (select all that apply) **3 / 3 points**

- ☑ A: Increased capacity

Correct
Congratulations! Choices (A, B, and D) are the correct responses. Massive MIMO helps increase capacity, improve coverage, and enable mmWave.

- ☑ B: Better coverage

Correct
Congratulations! Choices (A, B, and D) are the correct responses. Massive MIMO helps increase capacity, improve coverage, and enable mmWave.

- ☐ C: Large bandwidth
- ☑ D: Enabling mmWave

Correct
Congratulations! Choices (A, B, and D) are the correct responses. Massive MIMO helps increase capacity, improve coverage, and enable mmWave.

8. How does beamforming help the signal travel further? **2 / 2 points**

- ○ A: By using the power amplifier alone
- ◉ B: By focusing the energy in a specific direction
- ○ C: By using larger bandwidth
- ○ D: By increasing the beamwidth

Correct
Congratulations! Choice (B) is the correct response. Beamforming focuses the energy in a specific direction.