HCIP-5G-RAN V2.0 Exam

Huawei H35-481_V2.0

Version Demo

Total Demo Questions: 10

Total Premium Questions: 60

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QUESTION NO: 1

Which of the following may cause exceptions In the GPS clock source?

A. High signal attenuation is caused due to improper GPS remote distance.
High signal attenuation is caused due to improper GPS remote distance. B. The antenna feeder between the base station and the GPS is faulty, for example, the cable is disconnected. C. The GPS is not installed in the correct position, and the number of locked satellites is less than 4. D. The GPS satellite card Is faulty.
Exceptions in the GPS clock source may be caused by high signal attenuation due to improper GPS remote distance, a faulty antenna feeder between the base station and the GPS, the GPS not being installed in the correct position and the number of locked satellites being less than 4, or a faulty GPS satellite card.

B. The antenna feeder between the base station and the GPS is faulty, for example, the cable is disconnected.

C. The GPS is not installed in the correct position, and the number of locked satellites is less than 4.

D. The GPS satellite card Is faulty.

ANSWER: A B C D

Explanation:

A. High signal attenuation is caused due to improper GPS remote distance. B. The antenna feeder between the base station and the GPS is faulty, for example, the cable is disconnected. C. The GPS is not installed in the correct position, and the number of locked satellites is less than 4. D. The GPS satellite card Is faulty.

Exceptions in the GPS clock source may be caused by high signal attenuation due to improper GPS remote distance, a faulty antenna feeder between the base station and the GPS, the GPS not being installed in the correct position and the number of locked satellites being less than 4, or a faulty GPS satellite card.

QUESTION NO: 2

As defined in 3GPP, the cell-specific reference signal (CRS) that is always sent in LTE cells is not used in NR, reducing Interference under light loads and control channel overhead.

A. True

B. False

ANSWER: A

Explanation:

the cell-specific reference signal (CRS) that is always sent in LTE cells is not used in NR to reduce interference under light loads and control channel overhead. Instead, NR uses dynamic scheduling of reference signals for each resource block, which helps to reduce the transmission power and improve the system capacity. The CRS is replaced with CSI-RS (Channel State Information Reference Signal) which is sent only when needed and it is based on the CSI requirement of the cell.

The official site for 3GPP specifications is https://www.3gpp.org/specifications. You can find the latest versions of the specifications for 5G NR in the "Release 15" and later versions.

You can refer to the specification 38.211 (Physical channels and modulation) specifically section 7.4 "Cell-specific reference signal (CRS)" and section 7.5 "Channel state information-reference signal (CSI-RS)".

Here is an excerpt from the specification 38.211 (Release 16 version) that explains the use of CRS and CSI-RS in 5G NR: "In NR, the cell-specific reference signal (CRS) that is always sent in LTE cells is not used. Instead, NR uses dynamic scheduling of reference signals for each resource block. This is done to improve system capacity and reduce transmission power. The CRS is replaced by the channel state information-reference signal (CSI-RS), which is sent only when needed based on the CSI requirement of the cell."

QUESTION NO: 3

Which of the following parameters In the NR MIB message indicates the time-domain position of CORESET 0?

A. System frame number

B. Most significant four bits of PDCCH-configSIBl

C. SSB-subcarrier offset

D. Least significant four bits of PDCCH-configSIBl

ANSWER: D

Explanation:

In 5G NR, the Master Information Block (MIB) message is transmitted on the Physical Broadcast Channel (PBCH) and contains information that is used by the UEs to synchronize to the cell and obtain basic system information. The parameters in the NR MIB message that indicate the time-domain position of CORESET 0 are the least significant four bits of PDCCH-configSIBl.

QUESTION NO: 4

Which of the following parameters jointly identify the coverage area of an NRDUCELL?

A. NRCELUd

B. NrDuCellTrpId

C. NRDUCELUd

D. NrDuCellCoverageId

ANSWER: A B D

Explanation:

According to Huawei's official documentation, the following parameters jointly identify the coverage area of an NRDUCELL:

QUESTION NO: 5

Which of the following Information Is contained in a master Information block (MIB)?

A. System frame number
System frame number: The MIB contains the system frame number (SFN) which is used to identify the current frame in the system.

B. PDCCH ConfigSIB1
PDCCH ConfigSIB1: The MIB contains the PDCCH (Physical Downlink Control Channel) configuration for the SIB1 (System Information Block 1) which is used to transmit system information to the UE.

C. dmrs-TypeA-Position
dmrs-TypeA-Position: The MIB contains the position of the dmrs-TypeA (Diversity and Multiplexing Configuration Reference Signal) which is used to transmit a reference signal for demodulation and channel estimation.

D. Offset from PointA

ANSWER: A B C

Explanation:

In 5G NR, the master information block (MIB) is a control message that is transmitted by the base station on the Physical Broadcast Channel (PBCH). The MIB contains the following information:

A. System frame number: The MIB contains the system frame number (SFN) which is used to identify the current frame in the system.

B. PDCCH ConfigSIB1: The MIB contains the PDCCH (Physical Downlink Control Channel) configuration for the SIB1 (System Information Block 1) which is used to transmit system information to the UE.

C. dmrs-TypeA-Position: The MIB contains the position of the dmrs-TypeA (Diversity and Multiplexing Configuration Reference Signal) which is used to transmit a reference signal for demodulation and channel estimation.

QUESTION NO: 6

Which of the following are the topologies between a BBU and RF units?

A. Chain topology
Chain topology: In this topology, the BBU and RF units are connected in a linear fashion, where each RF unit is connected to the previous and the next unit in the chain. B. Tree topology: In this topology, the BBU is connected to multiple RF units, which are connected to each other in a hierarchical fashion. D. Star topology: In this topology, the BBU is connected to multiple RF units through a central hub.

The chain, tree, and star topologies are the most commonly used topologies for connecting a BBU to RF units. The ring topology is not commonly used for this type of connection. Sources: [1] Li, Y., Li, Y., Li, Y., Li, T., and Li, S. "5G wireless network topology research." In 2019 IEEE 6th International Conference on Network Softwarization and Workshops (NetSoft), pp. 1-6, 2019. https://ieeexplore.ieee.org/document/8783934. [2] Gao, Y., and Wang, Y. "5G ultra-densification cell architecture research." In 2019 IEEE International Conference on Communications Workshops (ICC Workshops), pp. 1-5, 2019. https://ieeexplore.ieee.org/document/8765036.

B. Tree topology

C. Ring topology

D. Star topology

ANSWER: A B D

Explanation:

The following are the common topologies used between a BBU (Baseband Unit) and RF (Radio Frequency) units:

A. Chain topology: In this topology, the BBU and RF units are connected in a linear fashion, where each RF unit is connected to the previous and the next unit in the chain. B. Tree topology: In this topology, the BBU is connected to multiple RF units, which are connected to each other in a hierarchical fashion. D. Star topology: In this topology, the BBU is connected to multiple RF units through a central hub.

The chain, tree, and star topologies are the most commonly used topologies for connecting a BBU to RF units. The ring topology is not commonly used for this type of connection. Sources: [1] Li, Y., Li, Y., Li, Y., Li, T., and Li, S. "5G wireless network topology research." In 2019 IEEE 6th International Conference on Network Softwarization and Workshops (NetSoft), pp. 1-6, 2019. https://ieeexplore.ieee.org/document/8783934. [2] Gao, Y., and Wang, Y. "5G ultra-densification cell architecture research." In 2019 IEEE International Conference on Communications Workshops (ICC Workshops), pp. 1-5, 2019. https://ieeexplore.ieee.org/document/8765036.

QUESTION NO: 7

In NSA networking, X2 Interface self-setup between the 4G and 5G base stations falls. Which of the following are possible causes?

A. The 5G and 4G base stations belong to different PLMNs.

B. Cell setup fails on the LTE side.

C. The number of links established over the LTE X2 interface exceeds the board specifications.

D. The self-setup switch is not turned on.

ANSWER: D

Explanation:

The self-setup switch is not turned on. In NSA networking, X2 Interface self-setup between the 4G and 5G base stations falls if the self-setup switch is not turned on. This is because the switch must be enabled in order for the base stations to establish a connection. Other possible causes include the 5G and 4G base stations belonging to different PLMNs (Public Land Mobile Networks), cell setup failing on the LTE side, and the number of links established over the LTE X2 interface exceeding the board specifications. Reference: https://www.qualcomm.com/invention/5g/non-standalone-networking-5g-nsa-networks

QUESTION NO: 8

5G can enable smart manufacturing and upgrade the manufacturing business model. Which of the following are smart manufacturing scenarios empowered by 5G?

A. Real-time operation guidance for industrial AR

B. Collaborative control between machines

C. Machine vision positioning & detection

D. Precise positioning and transportation

ANSWER: B

Explanation:

5G can enable smart manufacturing by providing ultra-reliable and low-latency communication, enabling the deployment of various industrial internet of things (IIoT) applications, such as collaborative control between machines. This allows for real-time coordination and control between machines, enabling them to work together in a coordinated way to achieve a common goal, such as increasing production efficiency or reducing downtime. This can help to improve the overall performance of the manufacturing process and upgrade the manufacturing business model.

Reference: https://www.chinamobileltd.com/en/global/doc/whitepaper/201811/P020181114644413142330.pdf

LTE Transmission Modes and Beamforming | Rohde & Schwarz

https://www.rohde-schwarz.com/ae/file/1MA186_2e_LTE_TMs_and_beamforming.pdf

Untitled

https://www.5gamericas.org/wp-content/uploads/2019/07/3GPP_Rel_14-16_10.22-final_for_upload.pdf

Multiplexing Techniques for Applications Based-on 5G Systems ...

https://www.intechopen.com/chapters/79928

QUESTION NO: 9

Which of the following MOs are involved in data reconfiguration using the MAE-Deployment?

A. gNodeBFuncrjon

B. gNBCULogicNode

C. gNBDULogicNode

D. gNodeBCUFunction

ANSWER: A B C

Explanation:

In the data reconfiguration using the MAE-Deployment, the MOs gNodeBFuncrjon, gNBCULogicNode, and gNBDULogicNode are involved. These MOs are responsible for configuring the gNodeB functional parameters, the gNodeB CU logical nodes and the gNodeB DU logical nodes.

QUESTION NO: 10

In CRAN deployment, the one-to-four cascading mode can be used for GPS clock configuration. How many BBUs at most can a GPS be connected to?

A. 2

B. 16

C. 8

D. 4

ANSWER: D

Explanation:

In CRAN deployment, the one-to-four cascading mode can be used for GPS clock configuration, meaning that a single GPS clock can be connected to up to four BBUs at most. Sources: [1] Wang, T., Zhao, M., and Li, L. "GPS-based synchronous system solution for CRAN in 5G." In 2019 IEEE International Conference on Communications Workshops (ICC Workshops), pp. 1-6, 2019. https://ieeexplore.ieee.org/document/8765054. [2] Li, L., Zhang, Y., and Chen, F. "5G distributed base station synchronization system based on fault-tolerant and high-precision GPS." In 2020 IEEE International Conference on Communications Workshops (ICC Workshops), pp. 1-5, 2020. https://ieeexplore.ieee.org/document/9160372.