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**Exam** : **NQ0-231**

**Title** : **3G Radio Network Planning**

**Version** : **Demo**

1. The Node B antenna gain is 17 dB and receiver sensitivity 112 dBm, radiated power (EIRP) of user equipment (Ue) is 18 dBm and feeder cable loss is 3 dB. What is the MAXIMUM path loss?

- A. 114 dB
- B. 116 dB
- C. 144 dB
- D. 147 dB

Answer: C

2. What is the interference margin for 50% and 90% network loads?

- A. 3.0 dB and 10.0 dB.
- B. 5.0 dB and 1.5 dB.
- C. 3.0 dB and 7.0 dB.
- D. 4.0 dB and 10.0 dB.

Answer: A

3. Which one of the following services has the HIGHEST processing gain?

- A. 12.2 kbps AMR voice.
- B. 64 kbps RT data.
- C. 64 kbps NRT data.
- D. 384 kbps NRT data.

Answer: A

4. The required  $E_b/N_0$  value is dependent on which one of the following factors?

- A. Base station antenna gain.
- B. Speed of the user equipment (Ue).
- C. Fast fading margin.
- D. Body loss.

Answer: B

5. The most appropriate reason for Power control headroom is to:

- A. improve the downlink reception.
- B. maintain the fast power control at the cell edge.
- C. compensate slow fading.
- D. increase the transmitting power of user equipment (Ue).

Answer: B

6. If the cell radius is 2 km and the required service area is 100 km<sup>2</sup>, how many 3-sector sites (in coverage-limited case) are needed to provide the service for the area (k factor for site area is 1.95)?

- A. 5
- B. 8
- C. 13
- D. 19

Answer: C

7. If the cell range of 12.2 kbps voice service with 141.9 dB path loss is 2.3 km, what is the size of the cell area with omni-directional site (k factor for site area is 2.6)?

- A. 12.2 km?
- B. 13.8 km?
- C. 15.9 km?
- D. 16.6 km?NP

Answer: B

8. Considering 1 site (3 cells) with 1 only one carrier per cell, how many traffic hardware channels are needed if in the site the active users are: 1.8 voice, 0.7 CS64, 0.7 PS64 and 1 PS384 and knowing that for each connection the following hardware channels apply: 1 for voice, 4 for CS64, 4 for PS64 and 16 for PS384 are needed?

- A. 4
- B. 13
- C. 24
- D. 37

Answer: C

9. Considering 1 site (3 cells) with 1 only one carrier per cell, what is the downlink throughput (in Kb/s) PER CELL if in the site the active users are: 1.8 voice, 0.7 CS64, 0.7 PS64 and 1 PS384?

- A. 64.94.
- B. 165.19.
- C. 194.82.
- D. 514.76.

Answer: B

10. When applying the free space propagation loss formula both for GSM 1800 and WCDMA, what APPROXIMATELY is the propagation loss difference between the systems, if the distance from the BTS is 1500 meters? (Use frequency 2100 MHz for WCDMA.)

- A. 5.5 dB.
- B. 1.3 dB.
- C. 7.4 dB.
- D. 13.4 dB.

Answer: B

11. For the use of a shared antenna line between GSM and WCDMA, what is needed?

- A. Coupler or splitter.
- B. One shared BTS for GSM and WCDMA.
- C. Same output power both GSM and WCDMA.
- D. Diplexer or triplexer.

Answer: D

12. The output of coverage planning is needed for which one of the following processes?

- A. Code planning.
- B. Transmission planning.
- C. Propagation model tuning.
- D. Loading field measurements.

Answer: A

13. Which one of the following parameters can be measured with a UE connected measurement system but NOT with a scanner measurement system?

- A. P-CPICH Ec/No.
- B. BLER.
- C. SIR.
- D. Scrambling code.

Answer: B

14. Which one of the following network planning tasks is NOT normally performed with a radio network planning tool?

- A. Coverage planning.
- B. Traffic calculation.
- C. Hardware channel calculation.
- D. Monte Carlo Simulation.

Answer: C

15. The possible pilot pollution area can be detected from which one of the following?

- A. Ec/No lower than target and low number of scrambling codes seen.
- B. Ec/No lower than target and high number of scrambling codes seen.
- C. Ec/No higher than target and low number of scrambling codes seen.
- D. Ec/No higher than target and high number of scrambling codes seen.

Answer: B

16. What is the MAXIMUM number of P-CPICH signals, of similar strength, that the UE should measure?

- A. 1 WBTS cell.
- B. 2 WBTS cells.
- C. 3 WBTS cells.
- D. 4 WBTS cells.

Answer: C

17. Which one of the following is NOT a method to decrease inter-system interference?

- A. Tighter filtering for the Tx signal of GSM BTS.
- B. Proper frequency planning in GSM.
- C. Usage of shared antenna line.
- D. Careful antenna selection and placing.

Answer: C

18. Which one of the following does NOT make the UL adjacent channel interference worse?

- A. UE transmitting with maximum power.
- B. UE uses hard handover.
- C. Other operator BTS in a bad location.
- D. Own BTS transmitting with high power.

Answer: D

19. How can capacity (interference) be improved?

- A. Usage of transmission diversity.
- B. Increasing transmission power of UEs.
- C. Decreasing speed of UEs.
- D. Increasing SHO.

Answer: A

20. For what reason should the power control strategy be changed?

- A. UE location.
- B. UE type.
- C. UE service.
- D. UE speed.

Answer: D