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Question 1 (7 points) Saved

Match the following mobile communication systems to the multiple access technique used.

1

 UMTS

2

 GPRS

2

 EDGE

2

 GSM

1. WCDMA

2. FDMA/TDMA

Question 2 (5 points) Saved

In FDMA system, the allocated spectrum for uplink per user is 30 kHz. What is the total spectrum allocated per user for FDD?

90 kHz

60 kHz

30 kHz

15 kHz

Question 3 (4 points) Saved

TDMA is a more bandwidth efficient multiple access technique compare to FDMA.

15 kHz

Question 3 (4 points) Saved

TDMA is a more bandwidth efficient multiple access technique compare to FDMA.

True

False

Question 4 (7 points) Saved

Match the following mobile communication systems to their generation.

3

 EDGE

4

 UMTS

2

 GPRS

1

 GSM

1. 2G

2. 2.5G

3. 2.75G

4. 3G

Question 5 (5 points) Saved

Which one of the following is belonged to Home Location Register (HLR) in GSM?

Manages the interface between the GSM network and a few mobile stations through the air interface

Contains the information related to each mobile subscriber such as the subscriber's current location, the type of subscription, etc....

Responsible for policing actions in the network

Responsible for interconnecting mobile users to other mobile and fixed network users

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HBL_Tutorial 9

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KHIU KIM HONG EEE-DEEE-FT-3A-06: Attempt 1

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Question 5 (5 points) Saved

Which one of the following is belonged to Home Location Register (HLR) in GSM?

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Responsible for interconnecting mobile users to other mobile and fixed network users

Question 6 (5 points) Saved

Calculate the number of users that can transmit to the base station in Advance Mobile Phone System (AMPS) or 1G system if the guard band used is 5 kHz, the bandwidth per user is 30 kHz and the allocated spectrum is 5 MHz?

142

166

1000

125

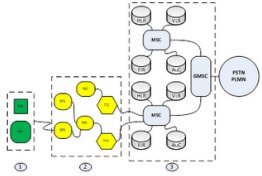
Question 7 (6 points) Saved

What are the three main sections of GSM architecture as shown in the following Figure?

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- 17 ✓

What are the three main sections of GSM architecture as shown in the following Figure?



- ☒ Mobile Station/ Radio Subsystem
- ☒ Base Station Subsystem
- ☐ Mobile Switching Center
- ☒ Network Switching System

Question 8 (5 points) ✓ Saved

The time slot allocated for uplink per user is 0.577 ms. What is the total time slot allocated per user for TDMA?

- ☐ 0.577 ms
- ☐ 1.731 ms
- ☒ 1.154 ms
- ☐ 0.289 ms

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Question 9 (6 points) ✓ Saved

Which of the following components are parts of the NSS in GSM architecture?

- ☐ BSC
- ☒ VLR
- ☒ MSC
- ☒ HLR

Question 10 (5 points) ✓ Saved

Calculate the number of users that can transmit to the base station in a mobile communication if eight users can share a bandwidth of 200 kHz and the allocated spectrum is 5 MHz?

- ☐ 100
- ☐ 25
- ☒ 200
- ☐ 2000

Question 11 (6 points) ✓ Saved

Which of the following sections in the GSM architecture is being upgraded to support GPRS/EDGE architecture?

- ☒ Base Station Subsystem

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Question 11 (6 points) ✓ Saved

Which of the following sections in the GSM architecture is being upgraded to support GPRS/EDGE architecture?

- ☒ Base Station Subsystem
- ☒ Network Switching Subsystem
- ☐ Radio Subsystem
- ☐ Mobile Station

Question 12 (5 points) ✓ Saved

Which one of the following is the main advantage of using more cells per cluster compared to lesser cells per cluster?

- ☐ Low system capacity
- ☐ More co-channel interference
- ☐ High system capacity
- ☒ Less co-channel interference

Question 13 (5 points) ✓ Saved

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Question 13 (5 points) Saved

If the guard time is 30 μ s and each user transmits 216 times per second, what is the time slot per user if eight users share a common bandwidth?

- ☐ 4.630ms
- ☐ 6.633ms
- ☐ 0.578ms
- ☒ 0.548ms

Question 14 (5 points) Saved

GSM is the most successful technology among other mobile communication systems ever invented based on the number of subscribers.

- ☒ True
- ☐ False

Question 15 (6 points) Saved

Which of the following components are parts of the BSS in GSM architecture?

- ☐ EIR
- ☒ TEC
- ☒ BTS
- ☒ BSC

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Question 16 (5 points) Saved

Which one of the following is NOT implemented in GSM?

- ☐ In GSM-900, the bandwidth allocated for uplink/downlink is equal to (915-890/960-935) 25 MHz.
- ☐ GSM uses a combination of FDMA and TDMA.
- ☒ The air interface used in GSM is WCDMA.
- ☐ Since GSM uses FDD (Frequency Division Duplex), the allocated frequency spectrum has to be divided into two groups for uplink and downlink.

Question 17 (13 points) Saved

Arrange the following wireless technologies from the lowest throughput to the highest throughput.

7	Ultra Wide Band
2	ZigBee
6	Wireless LAN IEEE 802.11n
1	GSM
4	Wireless LAN IEEE 802.11b
5	Wireless LAN IEEE 802.11a/g
3	Bluetooth