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Started on Tuesday, 5 March 2024, 4:30 PM

State Finished

Completed on Tuesday, 5 March 2024, 4:37 PM

Time taken 7 mins 32 secs

Question **1**

Complete

Marked out of 1.00

The bandwidth of each ARFCN (Absolute Radio Frequency Channel Number) channel and number of subscriber supported by each channel is

- ☐ a. 25 MHz, 6 users
- ☒ b. 200 KHz, 8 users
- ☐ c. 250 KHz, 8 users
- ☐ d. None of these

Question **2**

Complete

Marked out of 1.00

The 5G technology uses

- ☐ a. Infrared wave
- ☐ b. Millimeter wave
- ☐ c. None of these
- ☒ d. Microwave

Question **3**

Complete

Marked out of 1.00

In a dense urban environment, path loss exponent $n = 4.5$ and there are six number of channel cells in cellular system. The minimum required signal to interference ($\frac{S}{I}$) ratio is 13 dB. Determine the smallest cluster size needed to maintain this minimum required

- ☒ a. 3
- ☐ b. 5
- ☐ c. 2
- ☐ d. 4

Question **4**

Complete

Marked out of 1.00

Universal Mobile Telecommunications System (UMTS) is based on _____ multiple access technique.

- ☐ a. FDMA
- ☒ b. CDMA
- ☐ c. SDMA
- ☐ d. TDMA

Question **5**

Complete

Marked out of 1.00

Inter Symbol Interference is a phenomenon occurs in

- ☒ a. Time domain
- ☐ b. both frequency and time domain
- ☐ c. None of these
- ☐ d. Frequency domain

Question **6**

Complete

Marked out of 1.00

Determine the signal-to-interference ratio (SIR) in dB, for path loss $n = 3$, and $i = 1, j = 1$. There are 9 co-channel cells in cellular system.

- ☒ a. 3.0 dB
- ☐ b. 5.3 dB
- ☐ c. 4.0 dB
- ☐ d. 4.5 dB

Question **7**

Complete

Marked out of 1.00

Which one among the following statement is wrong

- ☐ a. In circuit switching network, billing is based on the duration of the connection.
- ☐ b. GPRS is a packet switching network
- ☒ c. In both circuit and packet switching networks, billing is based on the amount of transmitted data.
- ☐ d. In packet switching network, billing is based on the amount of transmitted data.

Question **8**

Complete

Marked out of 1.00

Which of the following statement is incorrect

- ☐ a. In soft handoff, a new connection is established before the old one is released.
- ☐ b. In hard handoff, the existing connection with the Base station (BS) must be broken before establishing a connection with a new BS
- ☐ c. All of these
- ☒ d. In hard handoff, the mobile unit simultaneously remain connected to more than one Base station (BS).

Question **9**

Complete

Marked out of 1.00

Determine the capacity of a cellular system, with cluster size $i = 1, j = 1$ where each cell is allocated a group of 60 channels and replication factor $M = 6$.

- ☐ a. None of these
- ☒ b. 1080
- ☐ c. 1680
- ☐ d. 720

Question **10**

Complete

Marked out of 1.00

Which one of the following statement is correct?

- ☐ a. Mobile IP allows users to keep the same IP address while roaming
- ☐ b. None of these
- ☒ c. In Mobile IP, users changes it address to care-of-address while roaming
- ☐ d. Mobile IP don't allows users to keep the same IP address while roaming

Question **11**

Complete

Marked out of 1.00

The uplink and downlink frequency channels of GSM are separated by

- ☐ a. 25 MHz
- ☐ b. 50 MHz
- ☐ c. None of these
- ☒ d. 45 MHz

Question **12**

Complete

Marked out of 1.00

For a roaming user who is visiting a new MSC, the IMSI (International Mobile Subscriber Identity) will be temporarily stored in

- ☐ a. HLR (Home Location Register)
- ☒ b. VLR (Visitor Location Register)
- ☐ c. None of these
- ☐ d. AUC (Authentication Center)

Question **13**

Complete

Marked out of 1.00

A transceiver module in a wireless sensor network contains which component internally?

- ☐ a. None of these
- ☐ b. Electrodes
- ☐ c. Wires
- ☒ d. Antennas

Question **14**

Complete

Marked out of 1.00

Among the following statements which one is incorrect

- ☒ a. Cellular networks are based on distributed routing and Adhoc networks are based on centralized routing.
- ☐ b. Cellular networks are based on reuse of frequency spectrum through geographical channel reuse
- ☐ c. High cost and time of deployment (cellular network) and Quick and cost-effective deployment (MANET)
- ☐ d. None of these

Question **15**

Complete

Marked out of 1.00

Optical communication needs line of sight for communication between transmitter and receiver.

- ☐ a. False
- ☒ b. True

Question **16**

Complete

Marked out of 1.00

Which of the statement is incorrect among the following

- ☐ a. None of these
- ☐ b. UTMS networks has a circuit switched element.
- ☒ c. UTMS networks has both circuit and packet switched element.
- ☐ d. UTMS networks has a packet switched element.

Question **17**

Complete

Marked out of 1.00

In a GPRS network, Serving GPRS Support Node is the equivalent of _____ system in GSM.

- ☐ a. VLR
- ☐ b. BSC
- ☒ c. MSC
- ☐ d. AuC

Question **18**

Complete

Marked out of 1.00

An Radio Frequency Identifier (RFID) reader, consists of how many components?

- ☒ a. Three
- ☐ b. Four
- ☐ c. One
- ☐ d. Two

Question **19**

Complete

Marked out of 1.00

Which of the following statement is incorrect

- ☒ a. In OFDM (Orthogonal Frequency Division Multiplexing), the PARP (Peak to average power ratio) is less.
- ☐ b. OFDM (Orthogonal Frequency Division Multiplexing) provides a high spectral efficiency and data rate.
- ☐ c. In OFDM (Orthogonal Frequency Division Multiplexing), the ICI (Inter-carrier-Interference) and ISI (Inter-Symbol-Interference) problem is less.
- ☐ d. None of these

Question **20**

Complete

Marked out of 1.00

A universal Mobile Telecommunication System (UMTS) is a _____ network.

- ☐ a. 4G
- ☐ b. 2.5G
- ☒ c. 3G
- ☐ d. 2G

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