Q.26 Define cell. Why Hexagonal shape is chosen for effective transmission. (CO2)

Q.27 What does high noise figure in a receiver mean? (CO4)

Q.28 What is called shadowing in Wireless Communication? (CO3)

Q.29 Define Channel Capacity? Is Channel Capacity same as bit rate? (CO4)

Q.30 What is the difference between antenna diversity and MIMO? (CO4)

Q.31 What are advantages of CDMA technology? (CO5)

Q.32 List main features of LTE. (CO6)

Q.33 Explain MIMO system in wireless communication. (CO4)

Q.34 Enlist few differences between 1G/2G/3G (CO2)

Q.35 What is difference between GSM. technology and CDMA technology. (CO6)

SECTION-D

Note: Long answer type questions. Attempt any two questions out of three questions. (2x10=20)

Q.36 What are different types of fading. Explain each one in details. (CO3)

Q.37 What does LTE mean? Explain its complete Architecture with Block diagram. (CO5)

Q.38 What does Diversity mean? How may diversity techniques can be identified. Explain in details. (CO3)

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3rd Sem / Mechatronics

Subject:- Mobile and Wireless Communication

Time : 3Hrs. M.M. : 100

SECTION-A

Note: Multiple choice questions. All questions are compulsory (10x1=10)

Q.1 What is wireless communication

a) Sending data from one location to with the use of physical medium.
b) Sending data from one location to another without the use of physical medium.
c) Sending data from one location to another without the use of virtual medium
d) None of the mentioned

Q.2 Which of the following is not an example of wireless communication ?

a) Wi-Fi
b) Mobiles
c) Landline
d) Wireless Computer parts

Q.3 For a cellular system, if there are N cells and each cell is allocated K channel. What is te total number of available radio channels, S ?

a) $S=K*N$ b) $S=K/N$
c) $S=N/K$ d) $S=K^N$

Q.4 Small scale propagation model is also known as _____

a) Fading model
b) Micro scale propagation model
c) Okumura model
d) Hata model

Q.5 Antenna's efficiency is given by the ratio of _____
a) Losses
b) Physical aperture to effective aperture
c) Signal power to noise power
d) Effective aperture to physical aperture

Q.6 Frequency diversity is implemented by transmitting information on more than one _____
a) Carrier Frequency b) Amplitude
c) Phase d) Modulation scheme

Q.7 Space diversity is also known as _____
a) Antenna diversity
b) Time diversity
c) Frequency diversity
d) Polarization diversity

Q.8 CDMA is a _____ spectrum multiple access techniques?
a) Narrow b) Spread
c) Online d) Uplink

Q.9 What is the access technique used by an LTE or LTE-A network.
a) WCDMA b) FDMA
c) TDMA d) OFDMA

Q.10 _____ is defined as input signal to Noise Ratio to the Output signal to noise ratio of a system
a) Noise Figure b) Noise Temperature
c) SNR^{o} d) None of mentioned

SECTION-B

Note: Objective type questions. All questions are compulsory. (10x1=10)

Q.11 A UMTS (Universal Mobile Telecommunication) Network is a_____generationNetwork (CO2)

Q.12 Define Adjacent Channel Interference. (CO3)

Q.13 What is LOS Propagation. (CO3)

Q.14 Define Doppler Effect. (CO3)

Q.15 MIMO stands for_____ (CO4)

Q.16 The Maximum Rate at which nearly error free data can be theoretically transmitted over a communication channel is defined as (CO3)

Q.17 OFDMA stands for_____ (CO5)

Q.18 What is the Access technique used by an LTE or LTE-A network (CO5)

Q.19 Mention one disadvantage of CDMA technology. (CO6)

Q.20 Define Multipath Fading (CO3)

SECTION-C

Note: Short answer type questions. Attempt any twelve questions out of fifteen questions. (12x5=60)

Q.21 Write a short note on 2 G (CO2)

Q.22 What causes free space path loss? (CO3)

Q.23 What is the purpose of link budget? (CO4)

Q.24 Explain Frequency Reuse and Frequency Reuse Factor. (CO2)

Q.25 What are advantages and applications of Wireless Communication System. (CO1)