MBICT COLLEGE OF ENGINEERING, NEW V.V. NAGAR

ASSIGNMENT-1

SUBJECT: MOBILE COMUTING AND WIRELESS COMMUNICATION (2170710)

SEM: 7TH IT/CE/CSE **DATE:06/08/2018**

1.	Compare the LAN and WAN.
2.	Define the term Multiplexing. Explain the FDM and TDM with one example each.
3.	Explain the Nyquist Theorem. Find the relationship among the following terms: Channel Capacity(C), Bandwidth(B) and Signal-to-Noise Ratio(SNR).
4.	Explain the Transmission Media
5.	Describe the Switching Techniques. Differentiate the Circuit Switching and Packet Switching.
6.	Explain the term Fading and its types in the Mobile Environment in detail.
7.	Describe the TCP/IP Protocol Architecture.
8.	Describe the Error Control Coding in detail
9.	Explain the 1G, 2G, 2.5G and 3G Mobile Communications.
10.	What are HLR and VLR? Describe its functions in Call Routing and Roaming
11.	Define the Frequency Hopping in Spread Spectrum? Write a note on TDMA, FDMA and CDMA.
12.	Explain the PLMN Interface.
13.	Enlist and Explain the different Modulation Techniques in the signal theory.
14.	Explain in detail the Direct Sequence Spread Spectrum (DSSS)
15.	What is the circuit switching? Explain the communication phases of circuit switching. Differentiate between Datagram and Virtual circuit operation?
16.	Explain OSI model with function of each layer. List the name of layer which implemented the following Bridge, Gateway, and Repeater.
17.	What is the principle of frequency reuse in context of cellular networks? List the ways of increasing the capacity of a cellular system?

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18.	Explain Delta Modulation with their Transmission and Reception block diagram?
19.	What is Direct Sequence Spread Spectrum technology? How does it work in CDMA technology?
20.	What are propagation modes? Explain free Space loss propagation modes in details?
21.	What is the need of ARQ? Explain Automatic Repeat Request (ARQ) in details?
22.	What is handoff and Roaming? Explain the types of handoff in details?
23.	Explain Handoff in detail.
24.	Define channel capacity. Write Shannon and Nyquist capacity formula. State the key factors that affect channel capacity.
25.	Given a channel with an intended capacity of 50 Mbps, the bandwidth of the Channel is 5 MHz. What signal-to-noise ratio is required to achieve this capacity?
26.	What is fading? Differentiate i. Fast and slow fading ii. Flat and selective fading.
27.	Explain the LANs, MANs and WANs Networks.
28.	Define following the internetworking terms. a. Internet b. Intranet c. Intermediate system d. Bridge e. Router
29.	Explain the frequency reuse concept.
30.	Explain the mobile cellular system call with all required steps
31.	Explain the following antenna parameter. a. Radiation patterns b. Antenna types c. Antenna gain
32.	Explain significant impairments of line of sight transmission
33.	Explain different types of Noise. a. Thermal noise b. Intermodulation noise c. Crosstalk d. Impulse noise

34.	Explain the Modulation techniques. a. BPSK b. QPSK c. MSK d. QAM
35.	Explain the Frequency hopping spread spectrum.
36.	Explain the following Error detection codes. a. Parity check b. Cyclic redundancy check c. Module 2 arithmetic d. Polynomial division
37.	Explain the following Error correction codes. a. Block code b. Hamming code c. Cyclic codes d. BCH code e. Reed-Solomon codes f. Block Interleaving
38.	Explain the flow and error control using automatic repeat request – (ARQ).