	Name: Siddhauth Pandya Roll No.: A023 Classmate Date Prove
	Many Many
	Mabile Computing
	The main or the state of
	The main problems of signal propagations are:
	Attenuation: The stranger of signal falls with distance over
	transmission modium. The extent of attenuation is a function
	of distance, transmission medium, as well as the frequency of
	the underlying transmission.
ž	Distortion: Since Segnals at different frequencies attenuate
	to different extents, a signal comprising of components
	over a range of frequencies gets distorted is, the shape
	of the recioned lignal changes.
	A standard method of randwing this problem is to amplify higher
	frequencies and their equalize attenuation over a said of frequencies.
	Company of the second of the s
3)	Dispersion: It is the phonomenon of speeding
	of a burst of electromagnetic energy during propagation.
	Bursts of data sent in rapid succession land to merge due
	to dispersion.
4)	Noise: The most permasive form of noise is thermal moise
,	verie Thornal noise as due to thornal agitation of
	electrons and is uniformly distributed across the frequency
	Spectrum
	to the variation of the signed strength
>)	Fooling: Fooling refers to the variation of the signal strangth with respect to time / distance and is widely prevalent in
	Wireless transmissions. The most conven causes of fading in the

	Date Page
	dil Att.
	ulivaloss environment are multipath propagation and mobility
9	Multipath Propagation: In Murdon media, signals propagate wing three principles, which are roplation, scattering, and of diffraction
	Delay Spread: The delay spread is determined by the desirety function of the resulting spread of the delay ones time.
8)	caused by the rate of change of the models radio channel. It is caused by either relative motion bothers the mobile and bose station or by the movement of dojects in the channel.
	Radio wower do vot follow a straight line because of blocking eligents in its path.
	Reflection is both usefull and harmful secause without reflection radio reception in towns would be almost impossible. A line of right almost never exists. However, reflection is the main reason for multipath propagation. Causing ISI.

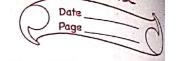
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ANS 2	There are several mechanisms which exist to mitigate
2.17	narrouband interference
-co.1/C	sometime in a mante of military to a title somet
	Dynamic Frequency Solection: De Senders com sense the
	medium for interference and choose a frequency runge
100431-69	with lower / no interference tiper LAN2 and 802.11 h use
	this scheme Network operators can also this dynamically
	assign frequencies to cells in mobile shore systems. DES
	has a relatively low complexity
	= mit sty Ist house som
2)	Frequency hopping: Slow frequency topping may
11 500	avoid frequencies with interferences most of the time with
	a certain probability. This scheme may be used in GISM.
52-7	Furthermore, wireless systems con use this principle for
- 17	multiplexing as it is done in Bluetouth Systems. Fast
10	hopping schemes transmit a symbol over several frequencies
/ Taket A	thus creating a spread spectrum FH system have
	medium complexity.
3)	Direct Sequence Spread Spectrum: Data in xored with a
w the cr	chipping sequence resulting in a spead signal.
	is a - all CDMA sustemme but also MWCAN'S.
	The same of the sa
	and fractions of small fractions of
	O I III
	the signal from the inexture of spread signals.
۷)	Spread Spectrum: It is the techniques involve spreading
7	the bandwidth needed to transmit data.
- 9-	The bandwin remains
	By transmitting over a large bandwidth, trabustness
	18y transming

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Amo 4	The special sp
	are;
	Cross - Tolk Bu
<u></u>	actler output with
ر <u>ي</u> او	Reduced ellet of the Hill
4)	Reduced effect of multipath fading Better Decreeity.
5)	Reduction in nous
6)	Co-existence with the other systems
7)	Longer operative distances
8)	Kard to detect
9)	Not easy to demodulate / decode
(a)	Defficult to Jam signals.
	Spread spectrum were originally for military uses, !
5.	now being used widely for commercial purpose.
Sag 1	Transport Oranger 1992 to May
365	Sproading can be achieved by xoking a but with a
- 11	Oripping sequence or fraguency hoping that in by using
	2 mothods
9)	Direct sequence spectrum (Dass)
5)	Frequency hoping Aproad spotrum (FHS)
	The state of the s
Aus	Oll 1 Mitually in an Illuda On tal 1 - 1
Ans 5	Collular Notwork is an Underlying technology for
	mobile phones, personal communication system, wereland
	retworking etc. The Technology is developed for mobile
	recioner system, Cellular networks use lower pour,
	shorter range and more transmitters for data transmission
	snow junge and
- 11	Scanned with CamScanner



	Worden Collular Systems solves the problem of spectral congestion and increases user copacity.
)	It how planning atvantages: offer vary high capacity in a limited spectrum
<u></u>	Reuse of radio channel in deferent alls.
3)	Keep interference levels within tolerable limits.
4	Fraguency reuse or frequency planning.
5)	orgainization of Wireless Collular Natural.
	Collular Systems for mobile Communications implement
	space division Multiplexing (SDM). Collular systems are used for frequency rouse or spectrum rouse. In this system frequency is limited all communication is enabled via bose station. Collular system with small colls must be used.
	Each transmitter typically called a base station, covers a cortain area, a cell. The shape of all deposit on the environment or sometimes on the system load. Top typically each cell holds a Cartain number of frequency bands. Neighbouring cells are not allowed to use the same frequency
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