

Program: BE Electronics & Telecommunication Engineering

Curriculum Scheme: Revised 2012

Examination: Final Year Semester VII

Course Code: ETC702 and Course Name: Mobile Communication

Time: 1 hour

Max. Marks: 50

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Note to the students: - All the Questions are compulsory and carry equal marks.

Q1.	If a total of 33MHz of bandwidth is allocated to a particular FDD cellular telephone system which uses two 25 kHz simplex channels to provide full duplex voice and control channels, compute the number of channels available per cell if system uses 4 cell reuse
Option A:	165
Option B:	95
Option C:	55
Option D:	45
Q2.	Relation between cluster size (N) and system capacity (C):
Option A:	Capacity increases with decrease in cluster size
Option B:	Capacity decreases with decrease in cluster size
Option C:	Capacity will remain same
Option D:	Capacity increases with increase in cluster
Q3.	How is bandwidth increased in Cdma2000?
Option A:	Clubbing adjacent radio channels
Option B:	Changing the hardware of base stations
Option C:	Change of spectrum
Option D:	Change of RF equipment
Q4.	SGSN stands for
Option A:	Serial Gateway Support Node
Option B:	Serving GPRS Support Node
Option C:	Serving GGSN Support Node
Option D:	Serial GPRS Support Node
Q5.	How is HSCSD different from GPRS?
Option A:	Infrastructure
Option B:	Multiple Access Scheme
Option C:	Modulation technique
Option D:	Switching technique
Q6.	What are the two options provided by Cdma2000 1xEV?
Option A:	Cdma2000 1xRTT, Cdma2000 3xRTT
Option B:	Cdma2000 1xEV-DO, Cdma2000 1xEV-DV
Option C:	Cdma2000 1xEV-DT, Cdma2000 1xEV-DO

Option D:	Cdma2000 1xRTT, Cdma2000 1xEV-DV
Q7.	Who has the responsibility of billing and system maintenance function in cellular system?
Option A:	Base Station
Option B:	PSTN
Option C:	MSC
Option D:	Mobile system
Q8.	Which of the following is not a characteristic of PN sequence?
Option A:	Nearly equal number of 0s and 1s
Option B:	Low correlation between shifted version of sequence
Option C:	Non deterministic
Option D:	Low cross-correlation between any two sequences
Q9.	GSM authentication process uses
Option A:	Ki, RAND, A3
Option B:	Ki, RAND, A8
Option C:	Kc, RAND, A3
Option D:	Kc, RAND, A5
Q10.	When an electromagnetic wave travels in free space, it suffers from _____
Option A:	Absorption
Option B:	Refraction
Option C:	Attenuation
Option D:	super-refraction
Q11.	Which of the following leads to evolution of 3G networks in CDMA systems?
Option A:	IS-95
Option B:	IS-95B
Option C:	CdmaOne
Option D:	Cdma2000
Q12.	In GSM number of time slot per RF carrier
Option A:	4
Option B:	6
Option C:	8
Option D:	10
Q13.	What happen to a call in fixed channel strategy, if all the channels in a cell are occupied?
Option A:	Queued
Option B:	Cross talk
Option C:	Blocked
Option D:	Delayed
Q14.	Umbrella cell approach is possible by using _____
Option A:	Antenna of same heights

Option B:	Antenna of different heights
Option C:	Different voice channels
Option D:	Different control channels
Q15.	The time over which a call can be maintained within a cell without handoff is called _____
Option A:	Run time
Option B:	Dwell time
Option C:	Peak time
Option D:	Cell time
Q16.	Co-channel reuse ratio is define by _____
Option A:	$Q=D \cdot R$
Option B:	$Q=D/R$
Option C:	$Q=D^R$
Option D:	$Q=1/R$
Q17.	_____ uses directional antennas to control interference.
Option A:	Sectoring
Option B:	Cell splitting
Option C:	Repeaters
Option D:	Micro cell zone concept
Q18.	Adjacent channel interference can be minimized through _____
Option A:	Changing frequency of base stations
Option B:	Careful filtering and channel assignments
Option C:	Increasing number of base stations
Option D:	Increasing number of control channels
Q19.	Doppler shift is directly proportional to _____
Option A:	Velocity
Option B:	Height of antenna
Option C:	Power of receiving antenna
Option D:	Power of transmitter
Q20.	A transmitter which radiates a carrier frequency of 1850 MHz for a vehicle moving 60mph, what will be the received carrier frequency if the mobile is moving directly towards the transmitter.
Option A:	1850.0016MHz
Option B:	1849.9998MHz
Option C:	1850.0000MHz
Option D:	1940.0000MHz
Q21.	As the $E_b/N_0$ ratio increases, the bit error rate _____
Option A:	increases
Option B:	decreases
Option C:	remains same
Option D:	approaches infinity

Q22.	Out of the total channels present in the cellular system, what is the percentage of voice and control channels?
Option A:	95% voice channels, 5% control channels
Option B:	5% voice channels, 95% control channels
Option C:	50% voice channels, 50% control channels
Option D:	25% voice channels, 75% control channels
Q23.	In MIMO, which factor has the greatest influence on data rates?
Option A:	The size of antenna
Option B:	The height of the antenna
Option C:	The number of transmit antennas
Option D:	The area of receive antennas
Q24.	Calculate the frequency reuse ratio Q for cell radius 0.7 km and it is separated from co-channel cell by a distance of 6 km.
Option A:	8.45
Option B:	8.57
Option C:	8.9
Option D:	9
Q25.	The standard interface that connects a BTS to a BSC in GSM system is called
Option A:	Um interface
Option B:	A-bis interface
Option C:	A interface
Option D:	SS7