



Name :
Roll No. :
Invigilator's Signature :

CS/M.Tech (ECE)/SEM-2/MCE-203/2013
2013
MOBILE COMMUNICATION

Time Allotted : 3 Hours

Full Marks : 70

The figures in the margin indicate full marks.

*Candidates are required to give their answers in their own words
as far as practicable.*

GROUP – A

Answer the following questions.

1. a) What are the advantages of wireless communication ?
b) What is outage probability ?
c) Compare CDMA, TDMA, FDMA.
d) What is chip ?
e) What is SVD ?
f) What is RMS delay spread ? 2 + 2 + 3 + 2 + 2 + 3

GROUP – B

Answer any *four* of the following.

2. a) Explain various mechanisms of radio wave propagation.
b) Describe Hata Model in brief.
c) Briefly explain one method of estimating path loss exponent. 6 + 4 + 4



3. a) Define Ultra-wide band and explain its important features.
b) Explain coherence band width of wireless channel.
c) Explain correlation of PN sequence and Jammer margin.
5 + 3 + 6
4. a) Define cell.
b) Explain frequency reuse in the context of cellular communication.
c) Explain Hand-off with suitable diagram.
d) Write a note on LMDS. 2 + 4 + 4 + 4
5. a) Justify the assumption of Rayleigh Fading channel and show that for such channel Bit error rate $\propto \frac{1}{SNR}$
SNR \equiv signal to noise ratio.
b) For a Rayleigh fading channel what is the probability that transmitted signal being attenuated more than 20 dB and phase lying between $(-\frac{\pi}{4} \text{ to } \frac{\pi}{4})$?
c) For a Rayleigh fading channel find bit error rate corresponding to SNR = 10 dB. 9 + 3 + 2
6. a) Explain SVD and Eigen mode of MIMO channel.
b) What are the different MIMO diversities ?
c) Explain multicarrier modulation and cyclic prefix in the context of OFDM. 5 + 5 + 4
7. Write short notes on any *two* of the following : 2 \times 7
a) OFDM
b) WCDMA
c) LTE
d) WIMAX.
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