Name : ……………………………………………………………

Roll No. : ……………………………………………………………

Invigilator's Signature : ……………………………………

CS/M.Tech(ECE)/SEM-2/MCE-203/2012

2012

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.
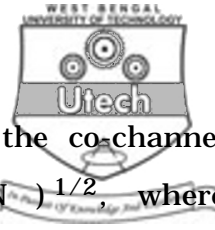
Question No. 1 compulsory and answer any *four* from the rest.

1.   Answer the following questions :   7 × 2 = 14

   a)   What are the major advantages of wireless communication ?

   b)   How the drawback of ciruit switching can be overcome in message switching ?

   c)   What are the different wireless LAN standards ?

   d)   What are the special features of UWB system ?

   e)   Define blocked call, traffic intensity.

   f)   Define NAV, WEP.

   g)   Find reuse factor (D/R), n = 4, (S/I) = 15 dB.

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2. a) Prove that for a hexagonal geometry, the co-channel reuse ratio is given by $Q = (3N)^{1/2}$, where $N = i^2 + ij + j^2$.

   b) What is mobility management ?

   c) What is the maximum no. of callers in each cell of GSM ?

   d) Distinguish between soft and hard hand-off ?

   $7 + 2 + 2 + 3$

3. a) Explain ground reflection model with suitable diagram.

   b) Compare different radio propagation mechanisms with suitable diagram.

   c) Briefly explain the procedure of estimating the path loss exponent. $5 + 5 + 4$

4. a) Explain different space diversity reception methods with suitable diagram.

   b) Explain basic steps for analyzing performance of fading channel.

   c) Define outage probability. $6 + 6 + 2$

5. a) Compare circuit switching, message switching and packet switching.

   b) What are the key differences between datagram and virtual circuit packet switching.

c) How does packet size effect the transmission time in a packet switching network ?

d) Why is routing important in a packet switched network ? 4 + 4 + 3 + 3

6. a) Compare and contrast FDMA, TDMA and CDMA techniques.

b) Distinguish between switch and hub.

c) What is carrier extension ? Why is it used in Gigabit Ethernet Network ?

d) How flow control is performed in Gigabit Ethernet Network ?

e) Why is spread spectrum technology used in wireless LAN ? 4 + 2 + 3 + 3 + 2

7. Write short notes on any *four* of the following : $4 \times 3\frac{1}{2}$

a) OFDM

b) Adaptive equilizer

c) GMSK

d) Microcell zoning

e) Piconet

f) CDMA 2000.

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