

Name :

Roll No. :

Invigilator's Signature :

**CS/M.Tech(ECE-OLD)/SEM-2/MMC-203/2011
2011**

WIRELESS & MOBILE COMMUNICATION

Time Allotted : 3 Hours

Full Marks : 70

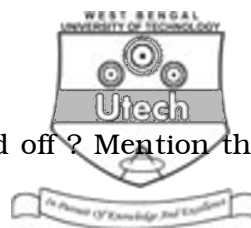
The figures in the margin indicate full marks.

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

Answer any *five* questions.

5 × 14 = 70

1. a) What is frequency reuse factor ? Explain the functions of NSS and BSS in a cellular network.
b) What is multipath fading ? How do you receive good signal under a fading scenario ?
c) Explain the scattering effect of long distance mobile communication. 5 + 5 + 4
2. a) Draw the architecture of the GSM Network indicating various interfaces. Briefly describe various units in a GSM system.
b) Show the call setup for incoming and outgoing calls in GSM network. 7 + 7



3. a) What are soft hand off and hard hand off ? Mention the situation when hand off is necessary. 6 + 4 + 4
- b) Mention the significance of D/R ratio with respect to cellular mobile communication.
- c) Mention how a call is initiated from PSTN number to a GPRS mobile terminal.
4. a) Explain how can the capacity of the cellular system be enhanced.
- b) Mention the different types of interference experienced in GSM system and state the mechanism to overcome those interference.
- c) A cellular service provider has received a spectrum band consisting of 1000 logical channels. Mention the distribution scheme of channels in a cell for cluster sizes $N = 4$ and 7 . 4 + 6 + 4
5. a) Differentiate between long term and short term fading. Indicate various components of small-scale fading within a multi-storied building.
- b) Explain with the aid of walsh table, the CDMA multiplexing and demultiplexing scheme. 8 + 6



6. a) Deduce Friis transmission formula in a long distance communication.
- b) What is duct propagation and how the wave propagates by this process ? 8 + 6
7. Write short notes on any *two* of the following : 7 + 7
- a) WLAN
- b) Mobile-IP
- c) WAP
- d) GGSN.
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