

Mobile Communication Systems

B.E. Sem. VII [EXTC]

EVALUATION SYSTEM

	Time	Marks
Theory Exam	3 Hrs.	100
Practical Exam	–	–
Oral Exam	–	25
Term Work	–	25

Objective : To study the concept of cellular system, GSM & CDMA mobile communication.

SYLLABUS

1. Introduction

- (i) Introduction to wireless communication systems
- (ii) The cellular concept : Frequency reuse, channel assignment strategies, handoff strategies, interference and system capacity, trunking and grade of service, improving the capacity of cellular systems.

2. Mobile Radio Propagation

Large scale path loss

Reflection, ground reflection model (2 ray model), diffraction, practical link budget design using path loss models.

Small Scale Fading and Multi-path

Small-scale multipath propagation, parameter of multi-path channels, types of small scale fading, Rayleigh and Ricean distribution, diversity, RAKE Receiver.

3. Multiple Access Technique in Wireless Communications

Frequency Division Multiple access, Time Division Multiple access, Spread Spectrum Multiple access, Space Division Multiple access.

4. GSM

GSM Network architecture, signaling protocol architecture, identifiers, channels, Frame structure, speech coding, authentication and security, call procedure, handoff procedure, services and features.

Mobile Data Networks

Data oriented CDPD network, GPRS and higher data rates, SMS in GSM.

5. CDMA Digital Cellular Standard (IS-95)

Frequency and channel specifications of IS-95, forward and reverse CDMA channel, packet and frame formats, mobility and radio resource management.

6. IMT-2000

Forward and reverse channels in W-CDMA and CDMA2000, Hand off and Power control in 3G system.

References :

- 1. Wireless Communications (Theodore S. Rappaport) Prentice Hall of India, PTR publication.
- 2. Principles of Wireless Networks (*Kaveh Pahlavan*) Prashant Krishnamurthy, PHI.
- 3. Wireless communication (*Singhal*) TMH.

