

FACULTY OF INFORMATICS

B.E. 4/4 (IT) I-Semester (Old) Examination, November 2013

Subject : **Wireless and Mobile Communications**

Time : 3 Hours

Max. Marks: 75

Note: Answer *all* questions of Part - A and answer any *five* questions from Part-B.**PART – A (25 Marks)**

1. Differentiate between FDD and TDD techniques used in wireless systems.
2. Write about wireless local loop (WLL)
3. Write expression for reflection co-efficient for parallel and perpendicular polarization at the boundary of two dielectrics.
4. Define the terms diffraction and scattering.
5. Differentiate between linear and non-linear modulation techniques as applied to wireless communications.
6. Draw the block diagram of a DPSK transmitter.
7. Define efficiency of a TDMA system.
8. Draw the architecture of GSM.
9. Define the terms foreign agent, co-located agent and home agent as applied to mobile networks.
10. Write the features of HDCP.

PART – B (50 Marks)

- 11.(a) Derive an expression for signal to interferences ratio (SIR) for a 7 cell cellular system assuming that all the co-channel cells are located at the same distance 'D' and radius of each cell in R.
(b) Write main features of 3G systems.
- 12.(a) From the knife edge diffraction model, show how the different power depends on frequency.
(b) Explain OKUMURA and HATA models for estimating pathloss in out door environment.
13. Draw the block diagram of a GMSK transmitter and receiver using direct FM generation and explain its operation in detail.
- 14.(a) Differentiate between frequency hopped multiple access and code demission multiple access techniques.
(b) Explain briefly GPRS.
- 15.(a) Write the improvements to be done to the classical TCP to be applied to mobile networks.
(b) Explain transaction oriented TCP in detail.
- 16.(a) Write advantages and disadvantages of snooping TCP.
(b) Write a brief note on signal punctuation into buildings.
17. Write short notes on any **two** of the following:
 - (a) CDMA digital cellular standard
 - (b) IP packet delivery
 - (c) Trunking and grade of service
