

**FACULTY OF INFORMATICS**

**B.E. 4/4 (IT) I-Semester (New) (Main) Examination,  
November/December, 2009**

**Subject : WIRELESS AND MOBILE COMMUNICATIONS**

**Time : 3 Hours ]**

**[ Max. Marks : 75**

**Note : Answer all questions from Part - A. Answer any five questions from Part - B.**

**PART - A**

**(25 Marks)**

1. What are the advantages of wireless communication ? 2
2. Define guardband. 2
3. Differentiate between 2G and 3G systems with respect to multiple access systems. 3
4. Define DS-SS. 2
5. Define tunneling. 2
6. What is Co-channel interference ? List Various strategies to reduce Co-channel interference. 2
7. Find the Co-channel reuse ratio  $Q$  if cluster size  $N$  is 9. 2
8. List Some of the features of TDMA. 2
9. Briefly explain Ericsson Break Point model. 3
10. How does cell splitting improve the efficiency of cellular systems ? 3
11. Define DHCP. 2

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12. Explain with suitable diagrams the differences between cellular, paging and cordless systems. 10
13. Explain the operation of QPSK transmitter and receiver with neat diagrams. 10
14. (a) List the various propagation models. 3  
(b) For a Two-Ray model derive the expression for the received power at a distance 'd' from the transmitter. 7
15. What are the major differences between TDMA, CDMA and FDMA ? Explain in detail about each multiple access with neat diagrams. 10
16. Explain how tunneling works in general and especially for mobile IP using IP-in-IP, minimal and generic routing encapsulation respectively ? Discuss the advantages and disadvantages of these three methods. 10
17. Explain knife-edge diffraction model in detail with the help of suitable diagrams. 10
18. Write a short notes on any *two* of the following : 2x5=10  
(a) Frequency Reuse  
(b) Handoff mechanism  
(c) MSK

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