Code No. : 3132

FACULTY OF ENGINEERING

B.E. 4/4 (ECE) I Semester (Main) Examination, December 2010

MOBILE CELLULAR COMMUNICATION

Time : 3 Hours] [Max. Marks : 75

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

PART – A **(Marks 25)**

1. What is a paging system ? Explain. 3

2. List some features of Blue tooth system. 3

3. Distinguish between adjacent channel and co-channel Interferences. 3

4. Explain the concept of a micro cell zones. 3

5. Explain briefly the CSMA protocol. 3

6. What are the three basic propagation mechanisms ? 2

7. What do you understand by mobile assisted handoff ? 2

8. Give an expression for path loss and indicate the terms. 2

9. What is fading ? How many types are they ? 2

10. Estimate the co-channel reuse ratio when cluster size is 7. 2

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PART – B (5×10=50 Marks)

11. Explain Bluetooth system and WLAN. 10

12. a) What is handoff and explain two handoff strategies in detail ? 6

b) What is near-end and far end effect ? 4

13. a) Compute the diffraction loss between the transmitter and receiver operating at 900MHz, separated by 2Km distance with a knife-edge obstruction of 25 m height, exactly midway blocking the line-of-sight path. Calculate diffraction Parameter V and the diffraction loss G_d. Given that for V>2.4, G_d=20 log (0.225 / V). 6

b) Explain in brief Log-Distance path loss model. 4

14. a) What is an outdoor propagation model ? Discuss the details of Okumura model. 6

b) Discuss briefly parameters of small scale multipath propagation models. 4

15. Explain packet radio protocols and reservation protocols in wireless communications. 10

16. a) Give details of DECT system and explain with the help of diagrams. 5

b) Explain the system architecture of GSM. 5

17. Write short notes on **any two** : (2×5=10)

a) Frequency reuse b) Non-fixed channel assignment c) FDMA