



## P.E.S. College of Engineering, Mandya - 571 401

(An Autonomous Institution affiliated to VTU, Belgaum)

**Seventh Semester, B.E. - Electronics and Communication Engineering**

**Semester End Examination; Dec. - 2015**

**Wireless Mobile Communication**

*Time: 3 hrs*

*Max. Marks: 100*

*Note: Answer any FIVE full questions, selecting at least TWO full questions from each part.*

### PART - A

- |   |  |   |
|---|--|---|
| 1 | a. Define the following terms:   | 6 |
|   | (i) Mobile equipment(ME) (ii) Simplex system (iii) FDD( Frequency Division Duplexing)                      |   |
|   | b. Describe call procedure for mobile - to - mobile communication between different service providers.     | 8 |
|   | c. Explain paging system with diagram.   | 6 |
| 2 | a. Write the equations for signal to interference ratio calculations for different conditions.             | 6 |
|   | b. Explain cell splitting for capacity extension in cellular system.                                       | 6 |
|   | c. List different wireless network topologies and explain with the help of diagrams.                       | 8 |
| 3 | a. What are the types of channel assignment strategies? Differentiate between them in the form of a table. | 8 |
|   | b. Define handoff. Explain handoff strategies for proper handoff.  | 8 |
|   | c. Explain umbrella cell approach.   | 4 |
| 4 | a. List and describe identification codes in AMPS system.  | 8 |
|   | b. Explain USDC digital voice channel speech coder with diagram.   | 8 |
|   | c. Compare IS-54 and IS-95 system.   | 4 |

### PART - B

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|---|---|----|
| 5 | a. Briefly explain parts of GSM with basic block diagram.   | 12 |
|   | b. With block diagram explain GPRS Architecture.  | 8  |
| 6 | a. Describe Walsh-Hadamard matrix with equations and explain the basic CDMA operation by considering two users P and Q (consider $P_K = 010011$ , $Q_K = 110101$ ). | 12 |
|   | b. Using GSM Technology, explain short message services (SMS).  | 8  |
| 7 | a. Explain the block diagram of CDPD network and mention any two advantages of it.  | 8  |
|   | b. Write the packet switching data format and different fields in packet of data. Explain.  | 8  |
|   | c. List the characteristics of RAM mobile data service.   | 4  |
| 8 | a. Explain with block diagram of Geolocation system and its architecture.   | 10 |
|   | b. Draw the equipment arrangement for the intelligent microcell system and explain its operation.   | 10 |