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## 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. - 2014**

**Wireless Mobile Communication**

*Time: 3 hrs*

*Max. Marks: 100*

*Note: i) Answer any FIVE full questions, selecting at least TWO full questions from each part.  
ii) All questions carry equal marks*

### PART - A

- |       |                                                                                                    |    |
|-------|----------------------------------------------------------------------------------------------------|----|
| 1. a. | What is GSM? Explain the facilities provided by GSM.                                               | 6  |
|       | b. With neat block diagram explain basic cellular system.                                          | 10 |
|       | c. Write neat diagram of a paging system and label the parts.                                      | 4  |
| 2. a. | What are the advantages and disadvantages of AD-HOC and infrastructure N/W? Explain.               | 8  |
|       | b. Briefly explain four methods of expanding the capacity of cellular Network.                     | 6  |
|       | c. Derive an equation for signal to interference noise ratio in terms of $1's$ and $N$ .           | 6  |
| 3. a. | What are channel borrowing techniques? Explain different methods of borrowing.                     | 10 |
|       | b. Compare FCA and DCA in the form of a table.                                                     | 10 |
| 4. a. | Explain different identification codes for each mobile under AMPs (Advance Mobile Phone services). | 10 |
|       | b. Briefly explain RACH, SPACH and BCCH with respect to IS-136 standard.                           | 10 |

### PART - B

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|-------|-----------------------------------------------------------|----|
| 5. a. | With neat diagram explain protocol Architecture of GSM.   | 8  |
|       | b. Briefly explain different types of Handoff.            | 6  |
|       | c. With neat diagram explain GPRS architecture.           | 6  |
| 6. a. | List advantages and disadvantages of CDMA.                | 8  |
|       | b. Explain the architecture of SMS.                       | 8  |
|       | c. Explain why CDMA is employed in wireless.              | 4  |
| 7. a. | Explain virtual circuit and circuit switching techniques. | 10 |
|       | b. List the advantages of packet switching.               | 6  |
|       | c. List the characteristics of RAM mobile data service.   | 4  |
| 8.    | Write explanatory note on the following:                  |    |
|       | i) Self positioning and remote positioning systems        |    |
|       | ii) Femoto, Pico and micro cells                          | 20 |
|       | iii) Power delivery intelligent cells                     |    |
|       | iv) Intelligent microcells.                               |    |