



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

(An Autonomous Institution affiliated to VTU, Belgaum)

Seventh Semester, B.E. - Computer Science and Engineering

Semester End Examination; Dec - 2016/Jan - 2017

Wireless Technology

Time: 3 hrs

Max. Marks: 100

Note: Answer FIVE full questions, selecting ONE full question from each unit.

UNIT - I

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| 1 a. | Discuss wireless transmitter for AM with neat sketch. | 8 |
| | b. With neat diagram, explain hardware view of a cellular system. | 7 |
| | c. List the steps performed during a call release operation. | 5 |
| 2 a. | Identify the different generations of wireless cellular networks. Explain briefly. | 6 |
| | b. Explain wireless cellular system components with diagram. | 10 |
| | c. What is the difference between an MSISDN number and an IMSI number? | 4 |

UNIT - II

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|------|---|----|
| 3 a. | Discuss the relative coverage areas of the various cell sizes. | 7 |
| | b. For a system with frequency reuse number $N = 7$, $N = 3$ and $N = 4$, show a possible frequency reuse plans for sectored cells. | 8 |
| | c. Explain Lee's Microcell concept capacity expansion. | 5 |
| 4 a. | Explain GSM Network Interfaces and signaling model with neat diagram. | 12 |
| | b. List the various GSM Identities. Explain GSM call setup using the MSRN with diagram. | 8 |

UNIT - III

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| 5 a. | Explain the components of a CDMA one network with diagram. | 8 |
| | b. Discuss the basic operations of SMS, EMS, MMS, and MIM services. | 6 |
| | c. What is a pilot channel? Explain operation of CDMA pilot channel signal. | 6 |
| 6 a. | Design the packet core network architecture of CDMA with diagram. | 6 |
| | b. Identity the three types of soft hand off of CDMA systems. | 4 |
| | c. Explain GPRS Network and GPRS Network components with neat diagram. | 10 |

UNIT - IV

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| 7 a. | Discuss the general characteristics of wire line and fiber-optic transmission lines. | 8 |
| | b. Explain wave propagation effects for both outdoor and indoor propagation case. | 9 |
| | c. List any three applications of UWB. | 3 |
| 8 a. | Discuss the comparison features of various spread spectrum modulation techniques. | 10 |
| | b. Compare convolutional encoder and turbin encoder. | 5 |
| | c. Explain block interleaving scheme with diagram. | 5 |

UNIT - V

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| 9 a. | List applications of broadband satellite systems and broadband microwave systems. | 10 |
| | b. Categorize the satellite systems, explain merits and demerits of satellite systems. | 10 |
| 10 a. | Construct bent-pipe satellite system with neat diagram. | 6 |
| | b. Explain the applications of MIMO technology. | 7 |
| | c. Illustrate the basic characteristics of a 4G wireless Network. | 7 |