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

(An Autonomous Institution affiliated to VTU, Belgaum)

Eighth Semester, B.E. - Information Science and Engineering

Semester End Examination; June - 2016

Wireless Technology

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. With a neat diagram, explain AMPS mobile phone initialization process. 8
- b. Write a diagram depicting the typical post-first generation wireless cellular telecommunication system. 4
- c. Illustrate mobile-originated call establishment and call release operations. 8
2. a. Explain different approaches to expand cellular system capacity. 12
- b. What is Handoff? Explain typical cellular handoff operation. 8
3. a. With suitable diagrams, explain GSM network interfaces and signaling model. 10
- b. List series of network layer in GSM protocol architecture. Briefly explain. Write format of a GSM layer - 3 message. 10
4. a. Explain with neat diagram, generation of CDMA synchronization and paging channel signals. 10
- b. Mention different forms of registration supplied by CDMA system. Briefly explain soft handoff and hard handoff experienced by a CDMA mobile. 10

PART - B

5. a. Explain convolution encoding and block Interleaving techniques used in mobile wireless systems. 10
- b. Explain frequency modulation, phase modulation and OFDM. 10
6. a. Write characteristics of wireless PAN (WPAN). Mention its applications. 5
- b. Write a note on Bluetooth Piconet architecture. 5
- c. Explain typical deployment of an IEEE 802.16 system. Discuss wireless MAN antenna sectoring scheme. 10
7. a. Discuss any three categories of satellite systems. 9
- b. Write a note on technical challenges for Broadband satellite systems. 5
- c. Explain broadband microwave and millimeter wave systems. 6
8. a. Write a note on emerging wireless technologies. 5
- b. Explain cognitive radio Technology and MIMO wireless antenna system. 10
- c. List 4G wireless characteristics. Briefly explain 4G wireless network. 5