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7E4238

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B.Tech. VII Semester (Main) Examination - 2013
7CS2 Wireless Communications & Networks

Time : 3 Hours

Maximum Marks : 80
Min. Passing Marks : 24

Instructions to Candidates:

*Attempt any **five** questions, selecting **one** question from each **unit**. All questions carry **equal** marks. (Schematic diagrams must be shown wherever necessary. Any data you feel missing suitably be assumed and stated clearly. Units of quantities used/calculated must be stated clearly.)*

Unit - I

1. Explain the following for cellular networks

    i)   Channel Assignment Strategies

    ii) 2nd & 3rd Generation Cellular Network

    iii) Improving Coverage & Capacity

    iv)   Applications of mobile communications   (4×4)

OR

1. a) Explain the cellular revolution process   (8)

    b) What is the coverage of a base station that transmits a signal at 2kW, given that the receiver sensitivity is - 100dBm, the path loss at the first meter is 32dB, and the path loss gradient is $\alpha = 4$?   (8)

Unit - II

2. a) What is GSM? Explain using diagram & with following blocks   (2)

    i)   BSC

    ii)   MSC

    iii) HLR

    iv)   BTS   (2×4)

b) Draw the frame structure of conventional GSM system and show its different time slots **(6)**

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OR

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2. a) What is handoff? Why it happens? rtuonline.com **(6)**

b) Compare cordless system with GSM Technology **(4)**

c) What are the effects of multigraph propagation? Also explain transmission impairments. **(6)**

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Unit - III

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3. a) For a wireless communication system explain the following

   i) TDMA

   ii) FDMA

   iii) CDMA **(12)**

b) Explain the concept of packet radio **(4)**

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OR

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3. a) For IEEE 802.11 explain the following **(12)**

   i) System Architecture

   ii) Protocol Architecture

   iii) Physical & MAC layer

b) What are the advantages & disadvantages of wireless LAN? **(4)**

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Unit - IV

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4. a) What is mobile IP? Explain the goals and requirements of mobile IP. **(8)**

b) Explain mobile Ad-hoc Network? Also explain GSR and DSR **(8)**

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OR

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4. (a) Explain the following terms for mobile IP **(12)**

   i) Mobile TCP

   ii) Snooping TCP

   iii) Selective Retransmission

(b) Compare infra-red and radio transmission **(4)**

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Unit - V

5. a) Explain frequency reuse principle in cellular system with suitable diagram **(6)**

    b) What is satellite network? Explain GEO MEO and LEO satellites with its parameters and their applications. **(10)**

OR

5. Write short notes on the following **(4×4)**

    i) Bluetooth

    ii) WWW

    iii) WML Script

    iv) push & pull services