

7E4238

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B. Tech. VII Semester (Main/Back) Examination 2013

COMPUTER ENGINEERING # 7CS2

**WIRELESS COMMUNICATION & NETWORKS**

Time : 3 Hours

Min. Passing Marks : 24

Maximum Marks : 80

**Instruction 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) 2<sup>nd</sup> & 3<sup>rd</sup> 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 2 kW, given that the receiver sensitivity is -100dBm, the path loss at the first meter is 32 dB, 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]

**OR**

- 2. (a) What is handoff? Why it happens? [6]
- (b) Compare cordless system with GSM Technology. [4]
- (c) What are the effects of multipath propagation? Also explain transmission impairments. [6]

**Unit-III**

- 3. (a) For a wireless communication system explain the following
  - (i) TDMA

(ii) FDMA

(iii) CDMA

- (b) Explain the concept of packet radio. [4]

**OR**

- 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]

**Unit-IV**

- 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]

**OR**

- 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]

**Unit-V**

- 5. (a) Explain frequency reuse principle in cellular system with suitable diagram. [6]
- (b) What is satellite network? Explain GEO MEC 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