QP Code : 29859

(3 Hours)   **[Total Marks : 100**

NB: 1. Question no. 1 is compulsory.

    2. Attempt any four out of remaining six.

    3. Assume suitable data if required.

Q.1   Attempt any four.   (20)
  (a) Explain hard handoff in mobile cellular system.
  (b) Explain IS95 features and services.
  (c) Differentiate between WCDMA and CDMA 2000.
  (d) Explain factors influencing small scale fading.
  (e) Explain cell splitting in mobile cellular system

Q.2(a) With neat diagram explain reverse link traffic channel in IS-95.   (10)
  (b) Explain RAKE receiver in detail.   (10)

Q.3(a) Compare SDMA, TDMA, FDMA and CDMA.   (10)
  (b) Explain with neat diagram HSCSD network architecture.   (10)

Q.4(a) Explain IMT 2000 indetail.   (10)
  (b) With neat diagram explain GPRS architecture.   (10)

Q.5(a) Explain power control in 3G system.   (10)
  (b) Explain Path Loss model.   (10)

Q.6(a) Give 3G – CDMA evolutionary path.   (05)
  (b) What is Grade of Service, Erlang B and Erlang C system explain.   (05)
  (c) Explain security algorithm in GSM.   (10)

Q7(a) Consider that a geographical service area of a cellular system is 420 sq km, a   (10)
    total of 1001 radio channels are available for handling traffic. Suppose the
    area of a cell is 12sq km

  (1) How many times would the cluster of size 7 have to be replicated in order to
    cover the entire service area? Calculate the number of channels per cell and
    the system capacity.
  (2) If the cluster size is decreased from 7 to 4 then does it result into increase in
    System capacity.
  (b) Explain GSM architecture, and function of each block.   (10)

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