

QP Code : 31308

(3 Hours)

[Total Marks : 80

- N.B. :** (1) Question no.1 is compulsory.
 (2) Write any three questions from remaining five questions.
 (3) Assume suitable data where ever necessary.

1. (a) What is the role of GPRS in enhancing 2G GSM systems. 20
 (b) Explain factors affecting small scale fading.
 (c) Elaborate the concept of IMT 2000 family.
 (d) Differentiate between WCDMA & CDMA 2000.

2. (a) Describe the difference between service data units & protocol data units. 10
 How is mapping from one to other is done.
 (b) Explain IS-95 forward & reverse channel structure in detail. 10

3. (a) Explain GSM architecture & elaborate function of each block. 10
 (b) Draw the block diagram of LTE transmitter & Receiver. Explain them in detail. 10

4. (a) Consider geographical area of a cellular system is 480sqkm. A total of 910 radio channels are available for traffic handling suppose, area of a cell is 8sq km. 10
 (1) How many times would the cluster size of 7 have to be replicated in order to cover the entire service area? Calculate the number of channels per cell and system capacity.
 (2) If the cluster size is decreased from 7 to 4 then does it result into increase in system capacity.
 (b) Explain power control mechanism in 3G. 10

5. (a) Compare & contrast FDMA, TDMA, SDMA, OFDM, SSMA. 10
 (b) Explain concept of MIMO w.r.t. 4G technology. 10

6. Write notes on (any two) 20
 (a) EDGE architecture
 (b) Call procedures in GSM
 (c) Software defined radio.

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