B.E. Sem. VII (Rev) EXTC . May. 2008
Mobile Communication system. R.T. Exam.

ws April 08 460

Con. 3089–08. (REVISED COURSE) (8) CO–3502

(3 Hours) [Total Marks : 100

N.B.

1. Question No. 1 is compulsory.
2. Answer any four out of remaining six questions.
3. Assumptions made should be clearly stated.
4. Assume any suitable data wherever required but justify the same.
5. Figures to the right indicate full marks.
6. Illustrate answers with sketches wherever required.
7. Answers to questions should be grouped and written together, i.e. all answers to sub questions of individual questions like Q1, Q2, Q3 etc. should be answered one below the other.
8. Use legible handwriting. Use a blue/black ink pen to write answers. Use of pencil should be done only to draw diagrams and graphs.

Q.1 Explain in brief :

a. GSM channel types 5
b. Frame structure for GSM 5
c. Reverse CDMA channel 5
d. Service aspects of CDMA 5

Q.2 a. Describe the different approaches that are used to increase the coverage area of the cell site. 10

b. If a signal-to-interference ratio of 15 dB is required for satisfactory forward channel performance of a cellular system, what is the frequency reuse factor and cluster size that should be used for maximum capacity if the path loss exponent is (i) n=4, (b) n=3? Assume that there are six co-channel cells in the first tier, and all of them are at the same distance from the mobile. 10

Q.3 a. Describe the Knife edge diffraction model with an example. 10
b. Describe in brief the fading in mobile environment. 10

Q.4 a. Draw and explain the block diagram of GSM speech encoder and decoder. 10
b. Explain the functions of following in GSM network 10
(i) Home location register
(ii) Visitor location register
(iii) Mobile switching centre
(iv) Equipment identity register

Q.5 a. Describe in brief the forward CDMA channel. 10
b. Explain the key features of IS-95 CDMA system. 10

Q.6 a. Explain with block diagram the functional model of DECT. 10
b. Describe in brief the radio aspects of IMT-2000 10

Q.7 Write short notes on any **two** : 20

a. Voice modulation in AMPS
b. Iridium system
c. RAKE receiver in CDMA system
d. Security in GSM