

Roll No.

Total Pages : 3

BT-8/M-13

8823

MOBILE COMMUNICATION

Paper-IT-454

Time Allowed : 3 Hours]

[Maximum Marks : 100

Note : Attempt five questions in all, selecting at least one question from each Unit. All questions carry equal marks.

UNIT-I

1. (a) Explain the following :
 - (i) Trunking
 - (ii) Last call cleared system
 - (iii) Last call delayed system. 6
- (b) With the help of proper diagram, explain the method of locating co-channel cells in a cellular system. 14
2. (a) What is Cell splitting? How does it improve the performance of the cellular system? 10
- (b) Discuss the performance of DQPSK modulation technique in mobile communication systems. 10

UNIT-II

3. (a) What is point-to-point propagation model? How is it utilized for designing the practical link budget? 8

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- (b) What types of antennas are used for cell site? Mention their desirable characteristics. 6
- (c) Explain the gain and pattern relationship of mobile antennas. 6

4. (a) How does diversity mitigate the effect of fading on the performance of mobile communication systems? Explain. 6
- (b) A single branch Rayleigh fading signal has 20% chance of being 6 dB below certain mean SNR threshold. Determine :
 - (i) The mean of the Rayleigh fading signal as referenced to the threshold.
 - (ii) The likelihood that a two branch selection diversity receiver will be 6 dB below the mean SNR threshold. 14

UNIT-III

5. (a) Draw the block diagram of the architecture of GSM standard and explain the function of each block. <http://www.kuonline.in> 10
- (b) What are non-linear effects in FDMA? How will you implement FDMA in cellular systems? Explain. 10
6. (a) Discuss Japanese cellular TDMA in detail. 10
- (b) Discuss the following :
 - (i) IMT
 - (ii) WAP. 10

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UNIT-IV

7. (a) Give the block diagram of satellite system architecture and explain its operating principle. 10
- (b) What do you understand by the satellite constellation? Explain with an example. 5
- (c) Discuss Iridium in brief. 5
8. Write notes on the following :
- (a) Advanced mobile communication system using satellites 7
- (b) VSAT 7
- (c) DBS. 6