QUESTION BANK

Academic Year	:	2018 - 2019
Department	:	ECE
Year/Semester	:	IV-II Sem
Regulation	:	R13
Subject Code	:	Cellular Mobile Communication

UNIT-1

1 a) Describe the analog and digital cellular systems and limitations of AMPS standard.[6M]

b) Explain the phenomena of severe fading.[4M]

2. a) What are the main advantages and disadvantages of various cellular structures?[5M]

b) Discuss the performance criteria of the basic cellular system?[5M]

3. a) Describe the principle of operation of cellular mobile system and explain the Cellular concept with a neat diagram.[5M]

b) Why 800 MHz is for cellular mobile system?[5M]

4. a) What are the limitations of conventional mobile telephone system and Describe the various generations of wireless mobile systems.[5M]

b) Explain about NMT and NTT System[5M]

5.a)Briefly explain cell shape and handoff.[5M]

b)What do you mean by Mean Option Score and explain in detail.[5M]

UNIT-2

1.a) Explain the frequency reuse distance in cellular radio system. [5M]

b) List the various techniques used to expand the capacity of a cellular system, Explain in detail.[5M]

2. a) What is the purpose of cell sectoring? Explain how co-channel interference in a cellular system may be reduced?[5M]

b) Describe the frequency reuse concept in cellular communication system and derive the equation for the frequency reuse ratio.[5M]

3.a) Explain the concept of frequency reuse channels. [5M]

b) Derive the C/I for normal case in an Omni directional antenna system[5M]

4. a) Draw the frequency reuse pattern for a cluster size of N=3 and N=7. [5M]

b) What are the various components in a cellular system? Explain briefly[5M]

5.a)Describe the effects of antenna parameter on the cell interferences.[5M]

b)With the help of neat diagram explain the N cell reuse pattern for four ,seven cell reuse.[[5M]

UNIT-3

1. a) Explain the concept of lowering the antenna height to decrease the co-channel interference.[5M]

b) Prove that for hexagonal geometry the co-channel reuse ratio is given by Q=√3N [5M]

2. a) Explain how co-channel interference is measured in real time mobile radio transceiver.[5M]
b) Explain the importance of de-multiplexer at the receiver to reduce the non-cochannel interference.[5M]

3. a) Discuss the diversity schemes for interference reductions at both mobile unit and cell site.[5M]
b) What is near-end-far-end interference ratio and explain its effects?[5M]

4. a) Define co-channel interference. How is it measured at the mobile unit and cell site?[5M]
b) Explain different methods to reduce the co-channel interferences.[5M]

5a)Write short notes on diversity receiver.[5M]

b)Describe the effects of antenna parameter on the cell interference.[5M]

UNIT-4

1. a) Explain about the Underlay-Overlay Arrangement. [5M]

b) What do you understand by non-fixed channel assignment? Describe the corresponding algorithms.

2. a) Explain in detail access channels and operational techniques. [5M]

b) Write the concept of the self location scheme at the mobile unit and the Autonomous registration[5M]

3. a) Write about fixed channel assignment schemes in detail. [5M]

b) Compare the average blocking in spatially uniform and non uniform Traffic distribution for FCA, BCA and FBCA[5M]

4. a) Discuss the concept of frequency management concern to the numbering the channels and grouping into the subset.[5M]

b) Explain in detail the non-fixed channel assignment[5M]

5. a) Why there is a constant standard deviation along a path-loss curve. [5M]

b) Describe the various steps involved in finding antenna height gain in a mobile Environment.[5M]

UNIT-5

1. a) Why do the micro cellular structures have more number of handoffs per Second as compared to macro cellular structures? Explain.[5M]

b) What is meant by a dropped call? Explain the factors that influence the dropped call rate.[5M]

2. a) What is Intersystem handoff? [5M]

b) What are the various handoff strategies based on algorithms of handoff? Explain in detail.[5M]

3. a) What type of handoff is used when a call initiated in one cellular system Enters another system before terminating? Explain how it works. [5M]

b) What are the different vehicle locating methods? Explain in detail.[5M]

4. a) Write about forced handoff and delayed handoff mechanisms in detail. [5M]
b) What is the general formula of dropped call rate? Explain[5M]

5.a)Discuss various vehicle locating methods.[5M]

b)What is meant by MAHO, Explain[5M]

UNIT-6

1. a) Explain in detail about GSM architecture.[5M]
b) Explain about TDMA channels[5M]

2. a) Explain in detail about multiple access schemes. [5M]
b) Explain the architecture of NA-TDMA[5M]

3. a) What are the services offered by GSM channels? [4M]
b) Write short notes on,
i) TDMA structure [2M]

iii) Frame offset [2M]

4. a) Write short notes on modes in GSM channels. [5M]
b) Write about the signaling format and message structure in TDMA[5M]

5.a)Explain in brief about CDMA.[5M]

b) Explain about GSM CHANNELS.[5M]