Code No: R42041/R10 **Set No. 1**

IV B.Tech II Semester Supplementary Examinations, April/May 2017
CELLULAR AND MOBILE COMMUNICATIONS
(Electronics & Computer Engineering)

Time: 3 hours **Max Marks: 75**

Answer any FIVE Questions
All Questions carry equal marks

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1. (a) Explain the importance of data links in cellular system.
   (b) Briefly explain the evolution of Analog & Digital cellular mobile system. [6+9]
2. (a) Describe the concept of frequency reuse channels and frequency reuse distance.
   (b) Necessitate the requirements of cell splitting & Explain cell splitting. [7+8]
3. (a) Give the differences between next channel interference and neighboring channel interference.
   (b) Explain the occurrence of near-end-far-end interference in one cell and two cell system. [7+8]
4. (a) Let a distance between two fixed stations be 30KM the effective antenna height at one end is h_1 =150m above sea level. Find h_2 at the other end so that the received power always meets the condition $P_r < P_0$ at 900 MHz transmission. For the above find the range of h_2 which would keep $P_r < P_0$ and find the maximum received power.
   (b) Discuss about area-to-area prediction for cell coverage. [9+6]
5. (a) Compare the symmetrical and asymmetrical patterns.
   (b) Draw the Null-free pattern and how it represented? What is the application of it?
   (c) How a high gain broadband umbrella pattern antenna can be constructed for cell site? [4+5+6]
6. (a) What are the different techniques for increasing frequency spectrum?
   (b) Compare the average blocking in spatially uniform and nonuniform traffic distribution for FCA, BCA and FBCA. [7+8]
7. (a) What are the different types of handoffs? Explain how to implement them?
   (b) Define a dropped call rate and explain how it differ from blocked call? [9+6]
8. (a) Explain the significance of SIM in Mobile station.
   (b) What is the function of transcoder rate adoption unit in BSS?
   (c) What are the different kinds of downlink common channels? [5+4+6]

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