2006 JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY

I V B.TECH I I SEMESTER SUPPLEMENTARY EXAMINATIONS
CELLULAR & MOBILE COMMUNICATIONS
(COMMON TO ELECTRONICS & COMMUNICATION ENGINEERING, INFORMATION
TECHNOLOGY AND ELECTRONICS & COMPUTER ENGINEERING))

APRIL/MAY 2006

TIME 3 HOURS
MARKS: 80

Answer any FIVE Questions
All Questions carry equal marks

1. (a) Explain analog cellular systems AMTS in detail?

(b) What are the features of the mobile communications and explain each?

2. What do you mean by cell splitting? How area is divided, and explain the different cell splitting techniques?

3. (a) Write the effects on mobile system by applying the power decrease and antenna height decrease and beam tilting on coverage and interference?

(b) Explain the cross talk phenomena based on the telephone line?

4. (a) If Pr = 10W, Gt = 0dB , Gr = 0dB and fc = 900MHz. Find Pr in watts at a frequency space distance of 1Km.

(b) Prove that in the two ray ground model   = d - d   2hthr /d when this holds as a good approximation

5. (a) Classify the cell site antennas and describe these in detail?

(b) What do you understand by an engineering antenna pattern? Explain the corresponding pattern?

6. (a) Explain the channel assignment and hopping?

(b) Compare the radio aspects concern to the channel assignment in between analog and digital cellular system?

7. (a) Explain clearly how to calculate and µ for single cell?

(b) Why hand off is necessary for cellular systems Determine the two types of handoffs based on signal strength and C/I ratio?

8. (a) Discuss various methods of filling coverage hole and list the points to be noted in the installation of an enhancer.

(b) Discuss the function of passive reflector and give the approximate separation between the antenna and the reflector.