C 20275

Name.....

Reg. No.....

EIGHTH SEMESTER B.TECH. (ENGINEERING) DEGREE EXAMINATION, JUNE 2006

EC 2K 805 A—WIRELESS MOBILE COMMUNICATION

Time : Three Hours

Maximum : 100 Marks

Answer **all** *questions.*

1. (a) What is meant by coherence bandwidth ? Give the expression.
   (b) List the types of small-scale fading.
   (c) Write the concept of polarization diversity.
   (d) Write the concept of equal gain combining technique.
   (e) What is meant by near-far effect ? Explain.
   (f) Write the concept of cell splitting.
   (g) Define jamming margin and give the expression.
   (h) Write the concept of time hopped spread spectrum systems.

   (8 × 5 = 40 marks)

2. (a) Derive the expression for the power received in 2-ray ground reflection model.

   Or

   (b) Derive the impulse response model of a multipath channel.

   (15 marks)

3. (a) Derive the improvement offered by selection diversity combining.

   Or

   (b) Discuss the concept of RAKE receiver with neat diagram.

   (15 marks)

4. (a) Explain how does cell sectoring improve capacity in cellular system.

   Or

   (b) What is meant by adjacent channel interference ? How is it reduced in cellular systems ?

   (15 marks)

5. (a) Derive the expression for processing gain in direct-sequence spread spectrum system.

   Or

   (b) Discuss the synchronization techniques used in spread spectrum system.

   (15 marks)

[4 × 15 = 60 marks]