C 15884 (Pages : 2) Name.....

Reg. No.....

EIGHTH SEMESTER B.TECH. (ENGINEERING) DEGREE EXAMINATION, MAY 2011

EC 04 802 – WIRELESS MOBILE COMMUNICATION

Time : Three Hours Maximum : 100 Marks

Answer **all** *questions.*

I. (a) Draw the impulse response model of a multipath channel and write its significance.

(b) Write the causes of fading.

(c) Write the concept of feedback or scanning diversity with a diagram.

(d) What is meant by equal gain combining?

(e) Prove that the cochannel reuse ratio $Q = \sqrt{3N}$, where N is the cluster size.

(f) What is adjacent channel interference? How is it reduced?

(g) Define processing gain and jamming margin.

(h) Write the importance of synchronization in spread spectrum systems.

(8 × 5 = 40 marks)

II. (a) (i) Draw the *z*-ray ground reflection model and derive the expression for power received.

(ii) Write the concepts of level crossing rate.

(12 + 3 = 15 marks)

Or

(b) Discuss the following parameters of mobile multipath channel :

(i) Doppler spread.

(ii) Coherence Bandwidth.

(iii) Coherence time.

(iv) Multipath delay spread.

(5 + 4 + 3 + 3 = 15 marks)

III. (a) Discuss (i) frequency non-selective slowly varying fading channels ; (ii) frequency selective slowly fading channels.

Or

(b) Explain various diversity techniques used in mobile radio systems.

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Turn over

IV. (a) Explain the capacity improvement techniques in cellular system.

Or

(b) Explain the handoff strategies used in cellular system.

V. (a) Explain the fundamental concepts of direct sequence spread spectrum system.

Or

(b) Explain the concepts of frequency hopped spread spectrum.

[4 × 15 = 60 marks]

[redacted]