

**EIGHTH SEMESTER B.TECH. (ENGINEERING) DEGREE EXAMINATION  
MAY 2012**

CS 04 804(E)/IT 04 802—MOBILE COMMUNICATION SYSTEM

Time : Three Hours

Maximum : 100 Marks

**Part A***Answer all the questions.*

- I. (a) How will the next generation of wireless systems be different from the current 3G technologies ?  
(b) Define signal. Write a note on signal propagation.  
(c) Describe SMS, EMS, MMS.  
(d) Specify the applications of satellites.  
(e) Enumerate the two basic transport mechanisms used in DAB.  
(f) Why Hiperlan1 and Blue tooth rely on radio transmission ?  
(g) Compare wired networks and ad-hoc wireless networks related to routing.  
(h) Show the interaction of mobile IP with standard TCP.

(8 × 5 = 40 marks)

**Part B***With choice answer any one question.*

- II. (a) Discuss the problems arising in signal propagation, In this show the difference between wireless and wired transmission.

(15 marks)

*Or*

- (b) (i) A city has 180 cells with each cell having 19 channels each. It has been found that users in this city average three calls per hour at an average call duration of 2 minutes. For GOS of 0.02, it is found that the total carried traffic A is 12 Erlangs. Calculate the total number of subscribers that can be supported by the cellular system.

(6 marks)

- (ii) A city has an area of 4550 square miles. Find the total number of hexagonal cells that can be accommodated, if the diameter of the circle perfectly encompassing the hexagon is 10 m.

(9 marks)

- III. (a) List the tasks involved by Radio Network Controller (RNC) in UMTS.

(15 marks)

*Or*

- (b) Explain Multi-media Object Transfer (MOT) protocol with example.

(15 marks)

**Turn over**

IV (a) Explain in brief about the necessary requirements for location management.

(15 marks)

*Or*

(b) How do IEEE 802.11, Hiper LAN 2 and Bluetooth, respectively, solve the hidden terminal problem?

(15 marks)

V (a) Illustrate the packet delivery to and from the mobile node, with diagram.

(15 marks)

*Or*

(b) Explain with neat diagram about the basic architecture of cellular IP.

(15 marks)

[4 × 15 = 60 marks]