Register Number:

B.E., DEGREE EXAMINATIONS NOV/DEC 2012

Seventh & Fifth Semester

ELECTRONICS AND COMMUNICATION ENGINEERING

ECE135: Mobile Communication

Time: Three Hours **Maximum Marks:100**

Answer ALL Questions:-

PART A (10×1=10 Marks)

1. Accommodation of large number of mobile users in minimum radio spectrum is

   A. Trunking B. GOS C. Handoff D. Erlang.

2. Co Channel Reuse Ratio is given as

   A. Q = D/R B. Q = R/D C. Q = N√3 D. Q =.3√N

3. The first moment of power delay profile is

   A. Excess delay spread B. Mean Excess Delay C. RMS delay spread D. None

4. The Complex and power hungry codec is

   A. RELP B. GSM C. USDC D. CELP.

5. Power Level in a mobile can be controlled by

   A. BSC B. MSC C. MTSO D. none.

6. If the radiation pattern is controlled , the size of the cell is

   A. reduced B. increased C. remains constant D. None.

7. Directional Antenna in each cell

   A. Reduces co channel interference B. Increases interferences

   C. remains constant D. None

8. The near far problem occurs in

   A. TDMA B. FDMA C. SDMA D. CDMA.

9. The cellular standard that belongs to 3G

   A. GSM B. GPRS C.WCDMA D. AMPS

10. SIM stands for

    A. subscriber ideal module B. subscriber identity module

    C. subscriber indent module D. None

PART B (10 x 2 =20 Marks)

11. Define Frequency planning.
12. What is GOS?
13. List out the parameters of mobile multipath channels.
14. How the waveform speech coders are classified?
15. Mention the three classes of Lee Model.
16. Give few methods for reducing interferences.
17. If B_t is 12.5MHZ, B_{guard} is 10KHZ, B_c is 30KHZ, find the total number channels available in FDMA.
18. What are the benefits of umbrella pattern?
19. Define EIR in GSM
20. What is EDGE?

PART C (5 X 14 = 70 Marks)

21. a) In what ways the coverage and capacity of cellular radio system can be improved?

(OR)

b) Explain the frequency reuse concept in mobile radio system and also explain the different channel assignment strategies.

22. a) Explain LPC technique in detail.

(OR)

b) Explain the different types of small scale fading.

23. a) Derive an expression for received power for propagation over water and flat open area.

(OR)

b) (i) Explain different types of mobile antennas. (10)

(ii) In a mobile radio environment, the average cell-site antenna height is about 50m, the mobile antenna height is about 3m, and the communication path length is 5km. Determine the incident angle and elevation angle. (4)

24. a) (i) Explain TDMA and Discuss TDMA frame structure.

(OR)

b) Explain (i) Adjacent channel interference (3)

(ii) Near end and far end interference (4)

(iii) UHF TV interference (7)

25. a) Explain forward and reverse traffic channel modulation process in CDMA digital cellular standard.

(OR)

b) With neat sketch explain the architecture of GSM.

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