KUMARAGURU
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Register Number: …….

B.E DEGREE EXAMINATIONS: APRIL/MAY 2016

(Regulation 2013)

Sixth Semester

ELECTRONICS AND COMMUNICATION ENGINEERING

U13ECTE41**:** Mobile Communication

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

Answer all the Questions:-

PART A (10 x 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. Power level in a mobile can be controlled by ……..

3. The time over which a call may be maintained within a cell without handoff is

   a) Dwell time b) Setup time

   c) Holding time d) Propagation time

4. The near far problem occurs in ……..

5. The propagation model used for predicting field strength contour over irregular terrain

   a) Longley Rice Model b) Durkins Model

   c) Okumara Model d) Hata Model

6. In Linear polarization, right and left of …….. antenna at BS achieve best diversity gain.

7. The Complex and power hungry codec is

   a) RELP b) GSM

   c) USDC d) CELP.

8. The cellular standard that belongs to 3G is ……..

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

   a) reduces b) increases

   c) remains constant d) none of the above

10. …….. is a radio communication where the components are implemented in hardware.

PART B (10 x 2 = 20 Marks)

(Answer not more than 40 words)

11. Define Frequency planning.
12. Outline the objectives of channel assignment strategies.
13. List out the parameters of mobile multipath channels.
14. How the speech coders are selected for mobile communication?
15. Why there is a constant standard deviation along a path loss curve?
16. Name the types of interconnection links used in MSTO.
17. If B_t is 12.5MHZ, B_{guard} is 10KHZ, B_c is 30KHZ, calculate the total number channels available in FDMA systems.
18. Justify how the co channel interference is reduced?
19. Compare GSM and AMPS.
20. What are the advantages of CDMA technology?

PART C (5 x 14 = 70 Marks)

(Answer not more than 400 words)

Q.No. 21 is Compulsory

21. How the Linear Predictive Coder is used in the design of speech coding system? Explain with suitable example.

22. (a) Explain the techniques used for improving the coverage and capacity of cellular radio system.

(OR)

(b) Demonstrate the concept of frequency reuse and channel assignment in mobile radio system

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

(OR)

(b) (i) Explain the 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) Examine the TDMA system and discuss its 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) Illustrate the architecture of GSM with its services.

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