GIET MAIN CAMPUS AUTONOMOUS GUNUPUR – 765022

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Registration No:

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AR-18

M.TECH 1ST SEMESTER EXAMINATIONS(BACK), NOV/DEC 2019

ECE, MECPC1020

WIRELESS AND MOBILE COMMUNICATION

Time: 3 Hours Max Marks : 70

The figures in the right hand margin indicate marks.

PART-A (10 X 2=20 MARKS)

1. Answer the following questions.
   a) What do you mean by "Frequency Reuse"?
   b) Why "Handoff" is used? What are its types?
   c) Define coherence time. How can be the channel characterize with respect to coherence time?
   d) Write the features of GSM and GPRS?
   e) The total coverage area of a cellular system is 262.4 km2 and cell radius is 1km. What is the system capacity for N=4 if there are total 1000 duplex channels?
   f) What is scattering of radio signal?
   g) What is co-channel reuse ratio?
   h) Define LTE & VoLTE.
   i) Prove $D=\sqrt{3}NR$
   j) What us the need of equalizer in communication system ?

PART-B (5 X 10=50 MARKS)

Answer any five questions from the following.

2
   a) Discuss in detail about large scale and small scale multipath propagation models.
   b) Explain the free space propagation model and path loss model in detail. Also derive the equation for received power.

3.
   a) Compare FDMA, TDMA and CDMA.
   b) Explain PN Sequence generator with suitable diagram.

4.
   a) If a GSM system uses a frame structure where each frame consists of 8 time slots, and each time slot contains 156.25 bits, and data is transmitted at 270.833 kbps in the channel, find (a)the time duration of a bit (b)the time duration of a slot (c)the time duration of a frame (d)How long must a user occupying a single time slot wait between two successive transmissions?
   b) Explain about the architecture of GPRS .

5.
   a) Explain the evolution of wireless technologies from 1G to 4G with suitable examples.
   b) Explain least mean square algorithm for adaptive equalization.

6.
   a) Explain the comparison between FDMA,TDMA and CDMA system.
   b) Explain GSM system architecture.

7.
   a) What's a Rake receiver ? Explain operation and principle of M-branch RAKE receiver.
   b) Explain about the different parameters of Multipath channels.

8 .Write short answer on
   a) CDMA 2000
   b) EDGE

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