



Reg. No. :

Name :

**Eighth Semester B.Tech. Degree Examination, April 2014
(2008 Scheme)**

08.804 : SATELLITE AND MOBILE COMMUNICATION (T)

Time : 3 Hours

Max. Marks : 100

PART - A



Answer **all** questions.

1. With the help of a neat schematic explain major parameters of an elliptical orbit.
2. What do you mean by elevation of a satellite ? Give expression and explain the terms.
3. What are the advantages and disadvantages of a geostationary orbit for satellite communication ?
4. Consider a satellite transmitting 25 W at frequency of 4 GHz via an antenna of 18 dB gain. An earth station in the network uses an antenna of 12 m diameter with an efficiency of 65%. Determine the path loss.
5. Discuss the need for HLR and VLR in a cellular network.
6. What do you mean by frequency reuse ? Explain major benefits of frequency reuse.
7. Explain impulse response model of a mobile multipath channel. What are the parameters of multipath channel ?
8. Distinguish between TDMA and FDMA.
9. Explain the concept of smart antennas.
10. Explain the basic principles of space division multiple access technology for wireless access. **(10×4=40 Marks)**



PART – B

Answer **any two** questions from **each** Module.

Module – I

11. Briefly explain the design considerations of a parabolic reflector antenna.
12. With neat schematic explain single and multiple amplifier configurations for high power amplifiers.
13. Briefly explain the phenomenon of eclipse as applied to geostationary satellites and solar interference experienced at the earth station. How do these factors influence the system design ?

Module – II

14. Describe various statistical models for multipath flat fading.
15. Explain the architecture of GSM. Discuss the functions and responsibilities of major sections.
16. Discuss the sequence of events involved when a base station decide to handoff a mobile user.

Module – III

17. Describe parallel decomposition of MIMO Channel.
 18. Consider a spread spectrum system with processing gain of 1000 and an implementation loss of 2 dB. The required carrier to noise ratio at the demodulator input is 7 dB. Determine the interference which can be tolerated by the system.
 19. What do you mean by near-far-effect ? Briefly explain. **(6×10=60 Marks)**
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