



Reg. No. :

Name :

**Eighth Semester B.Tech. Degree Examination, October 2014
(2008 Scheme)
08.804 : SATELLITE AND MOBILE COMMUNICATION (T)**

Time : 3 Hours

Max. Marks : 100

PART – A



Answer **all** questions. **Each** question carries **4** marks.

1. Explain the terms :
 - a) Prograde orbit
 - b) True anomaly.
2. Describe antenna look angles. Which are the three parameters required to determine the look angles for geostationary orbit ?
3. Explain what is meant by geostationary orbit. How do it differ from a geo-synchronous orbit ?
4. Explain what is meant by effective path length in connection with rain attenuation.
5. Write short notes on “umbrella-cell” approach.
6. What do you mean by cell sectioning ?
7. What are the three basic propagation mechanisms ?
8. Explain Walsh Hadamard sequence.
9. Explain the advantages and disadvantages of frequency hopped spread spectrum.
10. Describe eye pattern.

(4×10=40 Marks)



PART – B

Answer **any 2** questions from **each** Module. **Each** question carries **10** marks.

Module – I

11. a) Briefly explain the relation between noise factor and noise temperature.
b) An LNA is connected to a receiver which has a noise Figure of 12dB. The gain of LNA is 40dB and its noise temperature is 120 K. Calculate the overall noise temperature referred to the LNA input.
12. Write short notes on power amplifiers used in the space segment of satellite.
13. Explain the link power budget equation. A satellite link operating at 14 GHz has receiver feeder losses of 1.5 dB and a free space loss of 207 dB. The atmospheric loss is 0.5 dB and the antenna pointing loss is 0.5 dB. Depolarization losses may be neglected calculate the total link noise for clear sky conditions.

Module – II

14. Explain the GSM system architecture.
15. Compare SDMA, FDMA and FHMA.
16. Explain the following terms :
 - a) Co-channel interference
 - b) Adjacent channel interference.

Module – III

17. Derive the expression for SNR of Rake receiver.
18. Describe the concept of CDMA in Cellular environment.
19. Explain code synchronization with suitable block diagram. **(6×10=60 Marks)**