



Reg. No. :

Name :

**Eighth Semester B.Tech. Degree Examination, December 2016
(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. State the Kepler's as applicable to satellites.
2. Mention the function of up converter and down converter in a satellite.
3. What is the effect of eclipse with reference to satellites ?
4. Briefly explain the microcell zone concept.
5. What are the merits of UWB communication ?
6. What is the principle of TDMA and mention its advantages ?
7. What is near-far effect ?
8. Mention the effect of space diversity on receiver performance.
9. Give the properties of spreading codes.
10. Mention the time dispersion parameters of a multipath channel.



PART – B

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

Module – I

11. Explain the terms geostationary and geosynchronous orbits. Describe the methods of launching satellites into orbits.
12. Define the elevation and azimuth look angles and derive the equations for the look angles of a satellite in geostationary orbit.
13. Consider a satellite transmitting 25W at a frequency of 4 GHz via an antenna of 18dB gain. An earth station in the network uses an antenna of 12 m diameter with an efficiency of 60%. Determine the gain of the earth station antenna, path loss, flux density at the earth station and power received at the output of the earth station antenna assuming the satellite earth station range to be 40, 000 km.

Module – II

14. Describe the architecture of GSM and explain mobility management and handover.
15. Explain the fading effects due to multipath time delay spread and Doppler shift.
16. Derive the Longely Rice and Okumura models for outdoor propagation.

Module – III

17. Describe the principle and merits of multiple input multiple output antenna systems.
 18. Explain the capacity of CDMA in cellular environment.
 19. Explain FEC coding for a CDMA system.
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