

**B.Tech. 7th Semester Electronics and Communication-
Engg.-III Examination December-2013**

SATELLITE COMMUNICATION

Paper-ECE-403-F

Time allowed : 3 hours]

[Maximum marks :100

Note :Attempt five questions in all. Q.No. 1 is compulsory.

Attempt one question from each unit. All questions carry equal marks.

1. (a) Explain working of CODEC.
- (b) Name various earth station parameters and their approx value.
- (c) Explain synchronous orbit.
- (d) What do you mean by look angle?
- (e) Difference between VSAT and MSAT. 5×4

Unit-I

2. (a) Explain the basic difference between an Active and Passive satellite system. Also enumerate their merits and demerits. 10
- (b) What are the advantages of a digital signal transmission ? Also explain how the digital satellite communication has reduced the size of earth station ? 10

3. Derive general link equations. Also find out expression for C/N and G/T ratios. How interference effects on complete satellite link design ? 20

Unit-II

4. (a) What is loading factor and how does it effects the fm/fdm signal transmission ? 10
- (b) Explain threshold in FM detector. Derive the S/N for SCPC signal. 10
5. (a) How a digital satellite communication different from an analog satellite communication? Also give out merits and demerits of each. 10
- (b) Enumerate various digital modulation techniques. Which one is mostly used for digital satellite communication and why ? 10

Unit-III

6. (a) What is burst ? Enumerate difference between reference burst and traffic burst. 10
- (b) What is spot beam ? Explain use of multiple spot beams in satellite communication. 10
7. (a) How one can determine earth coverage and slant range for geostationary satellites ? 10

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- (b) Explain Kepler's law of planetary rotation. How these are applied to the geostationary satellites?
10

Unit-IV

8. (a) Explain and compare various laser sources being used in laser communication systems. 10
- (b) Explain satellite beam acquisition; tracking and pointing. 10
9. Write short notes on :
- (a) MSAT
- (b) Sarsat
- (c) INMRSAT. 7,7,6