

7. (a) Compose LEO, MEO, GEO, and HEO types of satellites (10)
- (b) What is energy dispersal ? Discuss its applications for satellite communication. (6)
- (c) Explain the concept of frequency reuse. (4)
8. What do you understand by error rate performance of a system ? Calculate the error :
- (a) Rate performance of MSK and BPSK systems. (10)
- (b) Explain the concept of coherent and non coherent detection. (10)

Roll No.

22143

**M. E. 1st Semester
Electronics & Communication
Engg. Examination-
December, 2016**

SATELLITE & SPACE COMMUNICATION

Paper : MEEC-503

Time : 3 hours

Max. Marks : 100

Before answering the questions, candidates should ensure that they have been supplied the correct and complete question paper. No complaint in this regard will be entertained after the examination.

Note: Attempt any **five** questions. All questions carry equal marks.

1. (a) Describe briefly about history of satellite communication. Why does microwave play an important role in satellite communication ? (10)

- (b) Discuss the principle of space communication. (10)
2. (a) Explain the importance of gain to equivalent noise temperature for an earth station. (10)
- (b) Define the following terms :
- (i) Atmospheric absorption (2.5)
 - (ii) Selectivity (2.5)
 - (iii) Fidelity in context of receiver (2.5)
 - (iv) Frequency Window (2.5)
3. (a) Explain with the help of block diagram the working of receiver part of earth station. (10)
- (b) Mention the effect of eclipse on the orbital motion of a satellite. (5)

- (c) Discuss different methods of stabilizing a satellite. (5)
4. (a) Derive an expression for a digital satellite link and explain how is it dependant on System bandwidth (10)
- (b) Write in detail about orbital spacing. (10)
5. (a) Write in detail about various multiple access techniques. (14)
- (b) Describe the telemetry, tracking and command facilities of satellite communication system. (6)
6. Write short notes on :
- (a) Delay Transponders (7)
 - (b) OPSK effect (7)
 - (c) VSAT (6)