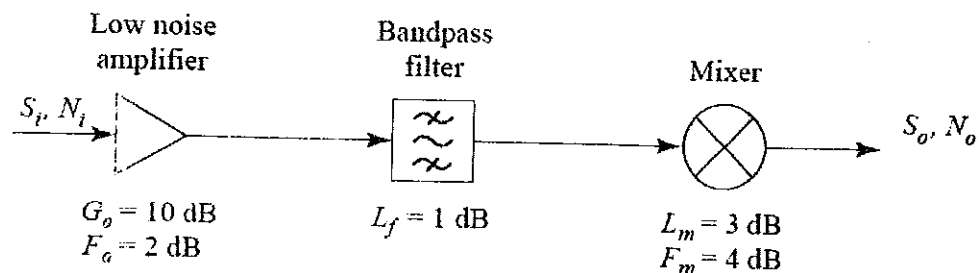


*Note: All questions are compulsory. Marks are indicated against each question in square brackets.*

1. With a neat diagram, explain in detail about the elements used in signal processing of satellite communications. [CO-2 , Marks:4]
2. Explain in detail along with a  $3 \times 3$  switch matrix settings the working of satellite switched TDMA. [CO-2 , Marks:4]
3. What are the different types of multiple accesses used in satellite communications? Compare these multiple access techniques. [CO-3 , Marks:4]
4. For the given system below, find the overall noise figure of the system. [CO-3 , Marks:4]



5. Explain the similarities and difference between the frequency translation transponder and the on-board processing transponder with diagrams. [CO-3 , Marks:4]
6. Define the following briefly. [COs-1 to 3 , Marks:5]
  - a. Free space path loss and Antenna aperture efficiency
  - b. Scattering and Scintillation
  - c. Dispersion and Absorption
  - d. Quantization and Encoding
  - e. Signal to noise ratio (SNR) and Bit Error Rate (BER)