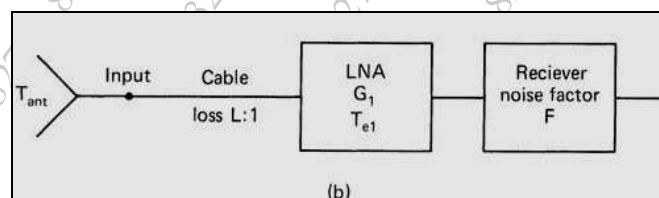
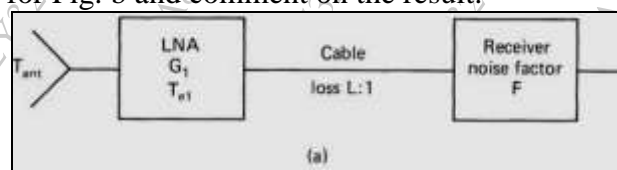


Duration: 3hrs

[Max Marks:80]

- N.B: (1) Question No 1 is Compulsory.
 (2) Attempt any three questions out of the remaining five.
 (3) All questions carry equal marks.
 (4) Assume suitable data, if required and state it clearly.

- 1 Attempt any FOUR [20]**
- a What is three-axis method of satellite stabilization? [5]
 - b What do you mean by PSLV? Give its example. [5]
 - c What is Sun transit outage? [5]
 - d What are the various factors for selection of launching sites? [5]
 - e Explain bath tub curve for satellite. [5]
- 2 a Explain CATV earth station with suitable diagram. How it is different than MATV? [10]**
- b Explain Cassegrain antenna with suitable diagram [10]**
- 3 a What do you understand by Station Keeping? What are the methods used for that? [10]**
- b What do you mean by orbital perturbations? Mention its causes? How to mitigate it? [10]**
- 4 a Classify Payloads for Nano satellite and explain it. What are the design considerations to each type of payload? Explain in detail. [10]**
- b List types of building of structure in Nano satellite .Explain in detail. [10]**
- 5 a What do you mean by active thermal control and what are the different techniques used for it w.r.t. Nano satellite? [10]**
- b Explain On board Computer and digital electronics (OBC) w.r.t. Hardware, software and software cycle diagram. [10]**
- 6 a For the system shown in Fig. a, the receiver Noise Figure is 12 dB, the cable loss is 5 dB, the LNA gain is 50 dB, and its noise temperature 150 K. The antenna noise temperature is 35 K. Calculate the noise temperature referred to the input. Repeat the same for Fig. b and comment on the result. [10]**



- b Write short note on: [10]**
- i) Input back off
 - ii) Output back off
 - iii) Intermodulation noise
 - iv) Earth eclipse of satellite