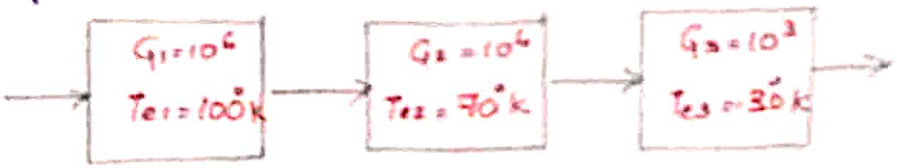
18ECE223T - SATELLITE COMMUNICATION & BROADCASTING

ASSIGNMENT II

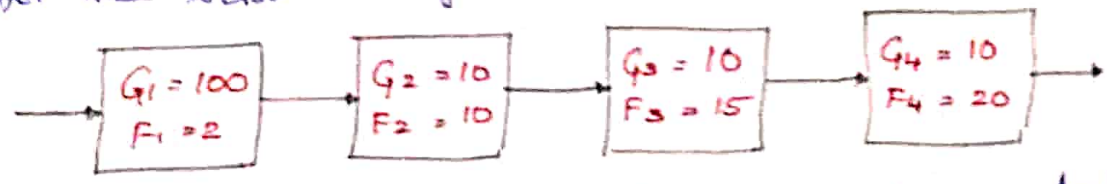
1. Calculate the power gain of paraboloid reflector antenna with a mouth diameter of 8m at 6 GHz. Let antenna aperture efficiency to be 75%. Let antenna diameter be reduced to 6m. find power gain. Compare the result and give your inference.

2. Find the equivalent noise temperature for the given below arrangement.



What impact the circuit will have if T_{e1} is reduced to 20° kelvin. Give your view.

3. For the below arrangement find the Noise figure (F)

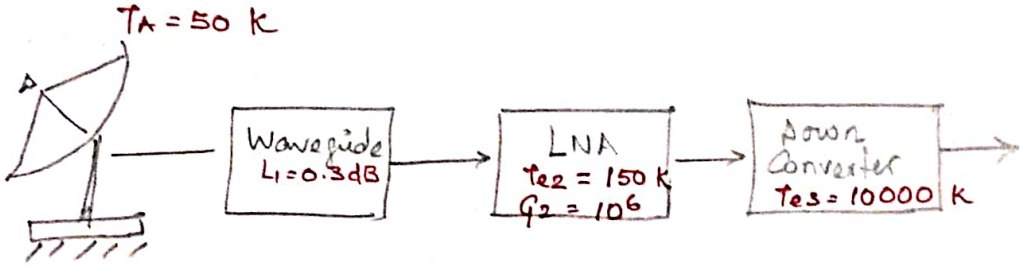


Find what will happen if F_1 is increased to 10. Analyze the result.

4. The range between a ground station and a satellite is 42000 km. Calculate free space loss at a frequency 6 GHz, 4 GHz and 12 GHz. Justify for the answer.

PTO.

5. For the Given arrangement find the G/T ratio in dB. Let T_0 be 290° Kelvin.



References :

1. Satellite Communications by Dr. D.C. Agarwal, by Khanna Publishers.

2. Satellite Communications by Dennis Roddy, Mc. Graw Hill Publishers.