Assignment 3

Due date for submitting this assignment is April 16, 2023, 23:59 IST.

Consider the following figure for the next three questions:

1. For the voltage source of wavelength 0.5 m on a lossy transmission line shown in Figure 1, calculate the attenuation constant. (You may assume the line is lossy.)

2. The cable has a velocity in the transmission line is 900 m/s. What is the minimum power that can be transmitted at a distance of 50 m on the line?

3. In the above circuit, what is the minimum power that can be transmitted at a distance of 50 m on the line?

4. In the above circuit, what is the maximum power that can be transmitted at a distance of 50 m on the line?

5. The transmission line in the diagram above is characterized by a loss of 1 dB at 1 GHz. What is the minimum power that can be transmitted at a distance of 50 m on the line?

6. The transmission line in the diagram above is characterized by a loss of 1 dB at 1 GHz. What is the maximum power that can be transmitted at a distance of 50 m on the line?

7. The transmission line in the diagram above is characterized by a loss of 1 dB at 1 GHz. What is the maximum power that can be transmitted at a distance of 50 m on the line?

8. For the voltage source in the above circuit, what is the minimum power that can be transmitted at a distance of 50 m on the line?

9. For the voltage source in the above circuit, what is the maximum power that can be transmitted at a distance of 50 m on the line?

10. For the voltage source in the above circuit, what is the maximum power that can be transmitted at a distance of 50 m on the line?

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