



Data Communication Tutorial 02 Transmission Media

1. Is the transmission medium a part of the physical layer? Why or why not?
2. How do guided media differ from unguided media?
3. What is the purpose of cladding in an optical fibre? Discuss its density relative to the core.
4. Given that the speed of light is $300 \text{ m}/\mu\text{s}$ and a satellite is at geo-synchronous orbit (35,863 km), how long would it take for a signal to go from the earth station to the satellite (minimum time)?
5. The wavelength of red light in a fibre is $0.5 \mu\text{m}$ (Its frequency is 390 THz). How long does it take the front of the wave to reach the end of the fibre if the length of the fibre is 2000 kilometres?
6. Why is synchronisation a problem in data communications?