

# **DPIT127 – Networks and Communications**

## **Week 4 Tutorial**

1. What the difference between the following types of transmission media. Can you please explain them by looking at different online resources available?
  - a. Twisted Pair
  - b. Coaxial Cables
  - c. Optical Fibre Cables
2. Can you please identify the networking settings for each one of the above networking media?
3. You have been tasked with designing a small network of 5 computers within a 200 metre radius within a single building. Use the Internet to identify the optimal networking components, including the appropriate media. Use a drawing software like Visio, or even Word to draw the network diagram for this network and explain why you have chosen the components you have chosen.
4. You have asked to explain the OSI 7 layer model to a group of students who have never studied any computing before. In your words, explain the functions of each of the 7 layers as well as the OSI model to these students. You can use diagrams and illustrations for this.
5. Can you please explain the difference between different types of multiplexing techniques?
  - a. Frequency Division Multiplexing
  - b. Synchronous Time Division Multiplexing
  - c. Statistical Time Division Multiplexing
  - d. Wavelength Division Multiplexing
  - e. Lossless compression
  - f. Lossy compression