**1. What is the difference between guided media and media not guided?**

*Guided media, the waves in the media is controlling the physical path to the recipient data. Examples of fiber-optic and coaxial cable. Meanwhile, the media is not guided, provide an apparatus for transmitting electromagnetic waves but don’t guide it, the example spread through the air and sea water.*

**2. What is the difference between analog and digital electromagnetic signals?**

*Analog signal:*

1. *Continuous wave continued to spread through a variety of media depending on the spectrum.*
2. *The analog signal is emitted regardless of the content.*
3. *To use amplifier distances that will add to the signal strength so as to produce a limited distortion.*

*Digital signal:*

1. *Discontinuous wave symbolized by binary numbers 1 and 0.*
2. *The existence of LSI and VLSI technologies lead to decreased cost and size of digital circuits.*
3. *More secure because it uses a repeater amplifiers in the appeal so that the transmission distancedoesn’t cause a lot of errors.*

**3. What are three important characteristics of a periodic signal?**

*Characteristic periodic signal:*

1. *Amplitude (peak amplitude (A) is the highest value or the signal strength at any time). Typically measured in volts.*
2. *Frequency (f) is the rate (in cycles per second, or Hertz [Hz]) in which the signal is repetitive.*
3. *Phase (ø) is a measure of the relative position at a time in one signal period.*

**4. How many radians in a perfect 360 degree rotation?**

*360 degrees is 2π radians*

**5. What is the relationship between the wavelength of the frequency sine wave?**

*There are two simple relationship between the two sine waves, the time and distance. Determine the wavelength (wavelength), λ of a signal as the distance occupied by a single lap time or use other means, the distance between the two points of phase-related than two consecutive cycles of time.*

**6. Define the fundamental frequency?**

*Frequency is the number of vibrations that occur within one second. The formula is the number of vibrational frequency divided by the number of seconds of time. Frequency has units of hertz / Hz.*

**7. What is the relationship between the spectrum of the signal with the bandwidth?**

*Relationship, the transmitted signal occupies a bandwidth much wider than the minimum bandwidth required to transmit the information signal. This means that the signal spectrum is used as a communication technique that is transmitted by using the bandwidth.*

**8. What is attenuation?**

*Attenuation is the weakening of the transmission impairments such as signal strength because of its distance through the medium of transmission. For guided media, attenuation is a more complex function of the distance and generally follow a logarithmic function.*