Q1\ Choose right answer for each the following.

1. Radio signal are made up of.
2. Voltages and currents.
3. Electric and magnetic fields.
4. Electrons and protons.
5. Noise and data.
6. Electronics communications was discovered in which century?
7. Sixteenth. , b- Eighteenth. , c- Nineteenth. , d- twentieth.
8. The communications medium causes the signal to be.
9. Amplified. , b- modulated. , c-attenuated. , d-modulated.
10. Two key barriers to human communication are .
11. Distance . , b- cost. , c- ignorance , d- language.

Q2\ Answer by using false or true for each the following.

1. Fourier series and Fourier transform are such mathematical tools which are used to modulates a signal.
2. Slope overload distortion one to major sources of quantizing error in DM.
3. Conversion of analog samples to a PCM bit stream called decoding.
4. The electromagnetic signals are also called a radio frequency wave.

Q3\Explain in brief a Delta Modulation (DM).

Q4\ Determine whether the fallowing signals are periodic or not :

1. x(t)= cos2/9 πt.
2. x(t)=cos2/11πt.

Q5\ Calculate the Nyquaist rate and the Nyquist interval for the signal .

x(t)=2/7π cos (3000πt)cos (2000πt).

Q6\ The information in an analog signal voltage waveform is to be transmitted a bandwidth of 100Hz and an amplitude rang of -10 to +10 volts.(accuracy is given as ±0.2%).

a. Find the minimum sampling rate required.

b. Find the number of bits in each PCM word .

c .Find minimum bit rate required in the PCM signal .

d. Find the minimum absolute channel bandwidth required for the transmission of the PCM signal .

Good Luck

Head of Department Lecturer