Q1\ Choose right answer for each the following.

1. The process of transmitting two or more information signal simultaneously over the same channel is called.
2. Multiplexing. , b- Telemetry. , c- Detection. , d- Modulation.
3. Recovering information from a carrier is known as.
4. Demultiplexing. , b- Modulation. , c- Detection. , d- Carrier recovery.
5. Radio signal are made up of.
6. Voltages and currents.
7. Electric and magnetic fields.
8. Electrons and protons.
9. Noise and data.
10. Electronics communications was discovered in which century?
11. Sixteenth. , b- Eighteenth. , c- Nineteenth. , d- twentieth.

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

1. FDM is used in telephone system , telemetry , television and communication network.
2. Slope overload distortion one to major sources of quantizing error in DM.
3. TDM makes maximum utilization of the transmission channel.
4. In PPM noise and interference are maximum.

Q3\ Make a list of signals types. Explain one type only.

Q4\ For a pulse-amplitude Modulation (PAM) transmission of voice signal having maximum frequency equal to fm =3KHz, calculate the transmission bandwidth. It is given that the sampling frequency fs = 8KHz and the pulse duration Ꞇ = 0.1 Ts.

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

x(t)=2/3π 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