

ATTEMPT ANY FIVE

1. Write down the differences between PAM, PPM and PWM? (2)

Answer:

1 Type of Carrier	Train of Pulses	Train of Pulses	Train of Pulses
2 Variable Characteristic of the Pulsed Carrier	Amplitude	Width	Position
3 Bandwidth Requirement	Low	High	High
4 Noise Immunity	Low	High	High
5 Information Contained in	Amplitude Variations	Width Variations	Position Variations
6 Transmitted Power	Varies with amplitude of pulses	Varies with variation in width	Remains Constant

2. Comparison of Amplitude Modulation and Frequency Modulation (atleast five point) (2)

Answer:

AM	FM
AM stands for Amplitude Modulation	FM stands for Frequency Modulation
AM is more susceptible to noise because noise affects amplitude, which is where information is "stored" in an AM signal.	FM is less susceptible to noise because information in an FM signal is transmitted through varying the frequency, and not the amplitude.
Transmitter and receiver are simple but synchronization is needed in case of SSBSC AM carrier.	Transmitter and receiver are more complex as variation of modulating signal has to be converted and detected from corresponding variation in frequencies.

3. What is modulation and its need? (2)

Answer: In the modulation process, some parameter of the carrier wave (such as amplitude, frequency or phase ) is varied in accordance with the modulating signal . This modulated signal is

then transmitted by the transmitter .The receiver demodulates the received modulated signal and gets the original information signal back .

Need of modulation:

1. Reduction in the height of antenna
2. Avoids mixing of signals
3. Increases the range of communication
4. Multiplexing is possible
5. Improves quality of reception

4. What is PLL FM demodulator? (2)

Answer: Phase locked loop, PLL FM demodulator or detector is a form of FM demodulator that has gained widespread acceptance in recent years.

PLL FM detectors can easily be made from the variety of phase locked loop integrated circuits that are available, and as a result, PLL FM demodulators are found in many types of radio equipment ranging from broadcast receivers to high performance communications equipment.

The PLL FM demodulation integrated circuits started to appear when integrated circuit technology developed to the degree to allow RF analogue circuits to be manufactured.

Although high frequencies are not normally needed, for PLL FM demodulators, the circuit must be capable of operating at the intermediate frequency of the receiver, and for receivers using FM this was often 10.7 MHz. Although by today's standards, this is not high, it was necessary for the technology to reach this state before PLL FM demodulators became available.