Analog Modulation - Pulse Modulation

① Pulse Amplitude Modulation (PAM)

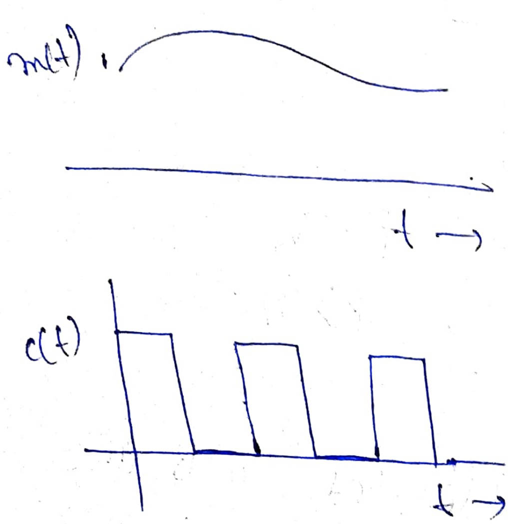
② " Time " (PTM) →
- PWM/
- PLM/
- PDM
- PPM

① PAM: In PAM, the amplitudes of the pulse train (carrier signal) is varied in accordance with the amplitude of the modulating signal.

② PTM: - - - - - -

- - - -

time of - - - -



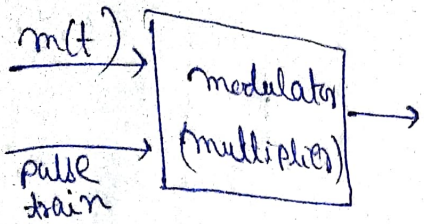
PWM/
PLM/
PDM

(Amplitude remains same but duration of pulse changes)

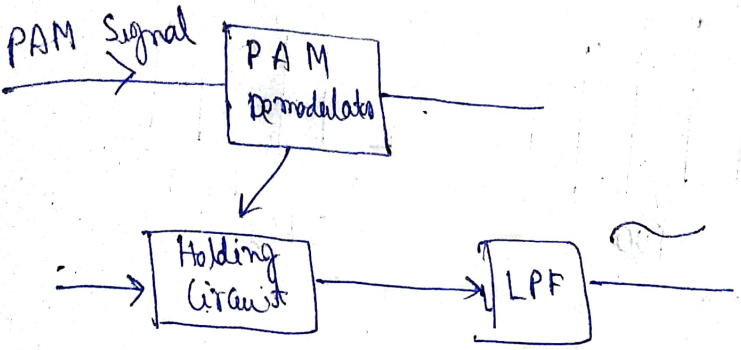
In PWM, the amplitude of pulses are same but duration or length of pulses change.

In PPM, both the amplitude and duration of pulses remain same (with respect to the carrier pulse train) but the position (lead or tail edge) of pulses get changed.

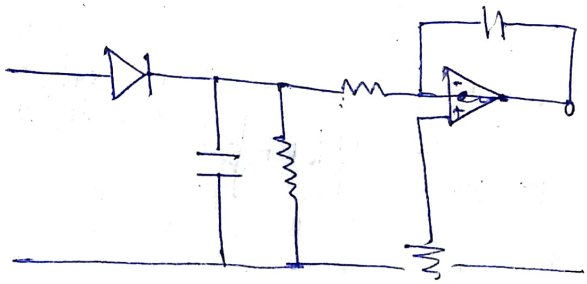
Generation of PAM:



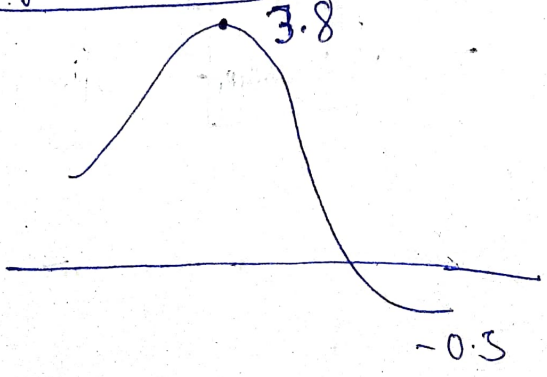
holding circuit by integration is demodulator.

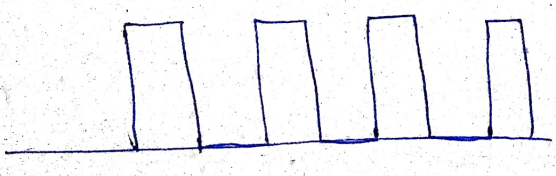


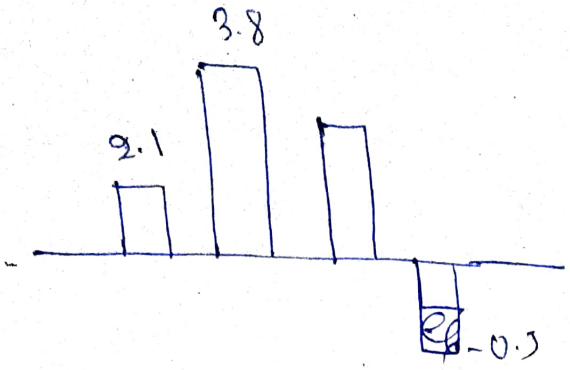
PAM:



Pulse Digital Modulation:

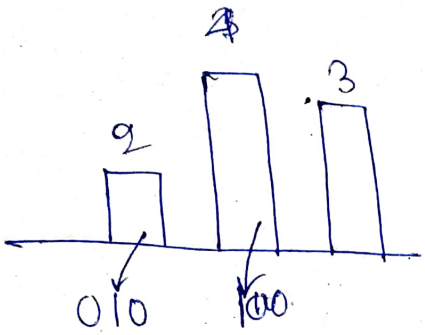




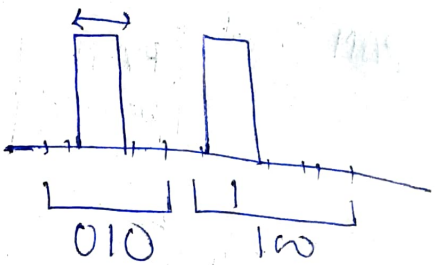


x	$y = Q(x)$
0.5 - 1.5	1
1.5 - 2.5	2
⋮	

new Quantisation



new bit pattern (Encoder)



~~new bit P.~~