D.Y. PATIL INTERNATIONAL UNIVERSITY

B.TECH CSE FY SEM-2

A.Y. 2022-2023

NAME: SURYAKANT UPADHYAY

PRN: 20220802043

SUBJECT: INTRODUCTION TO COMMUNICATION SYSTEMS

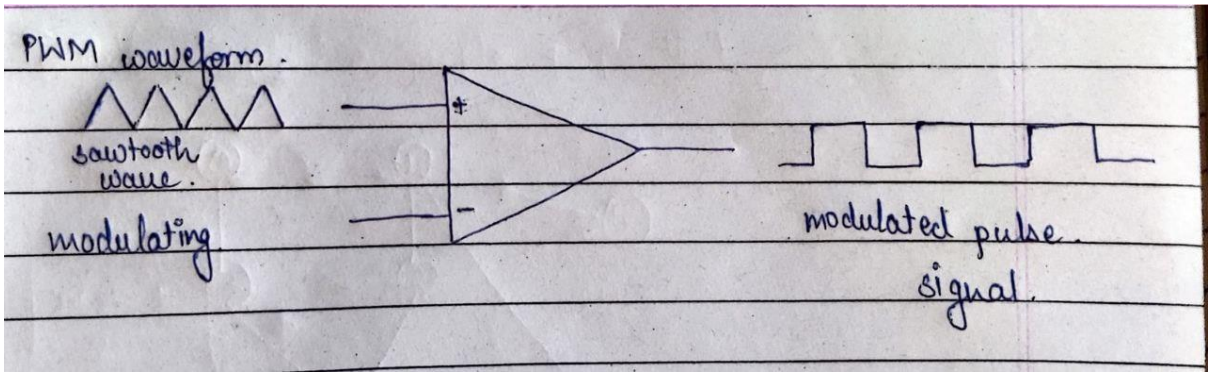
BATCH: A1

EXPERIMENT: 09

TITLE: Pulse Width Modulation

APPARATUS: Matlab Simulink

DRAW THE WAVEFORM:



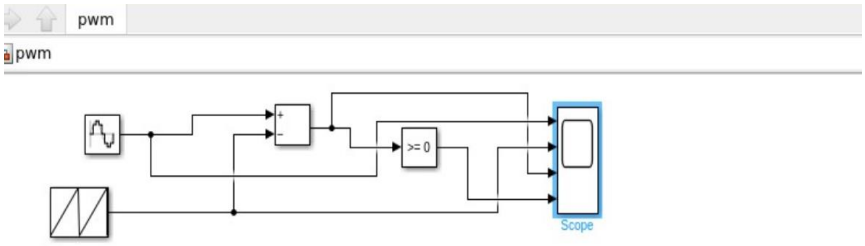
THEORY:

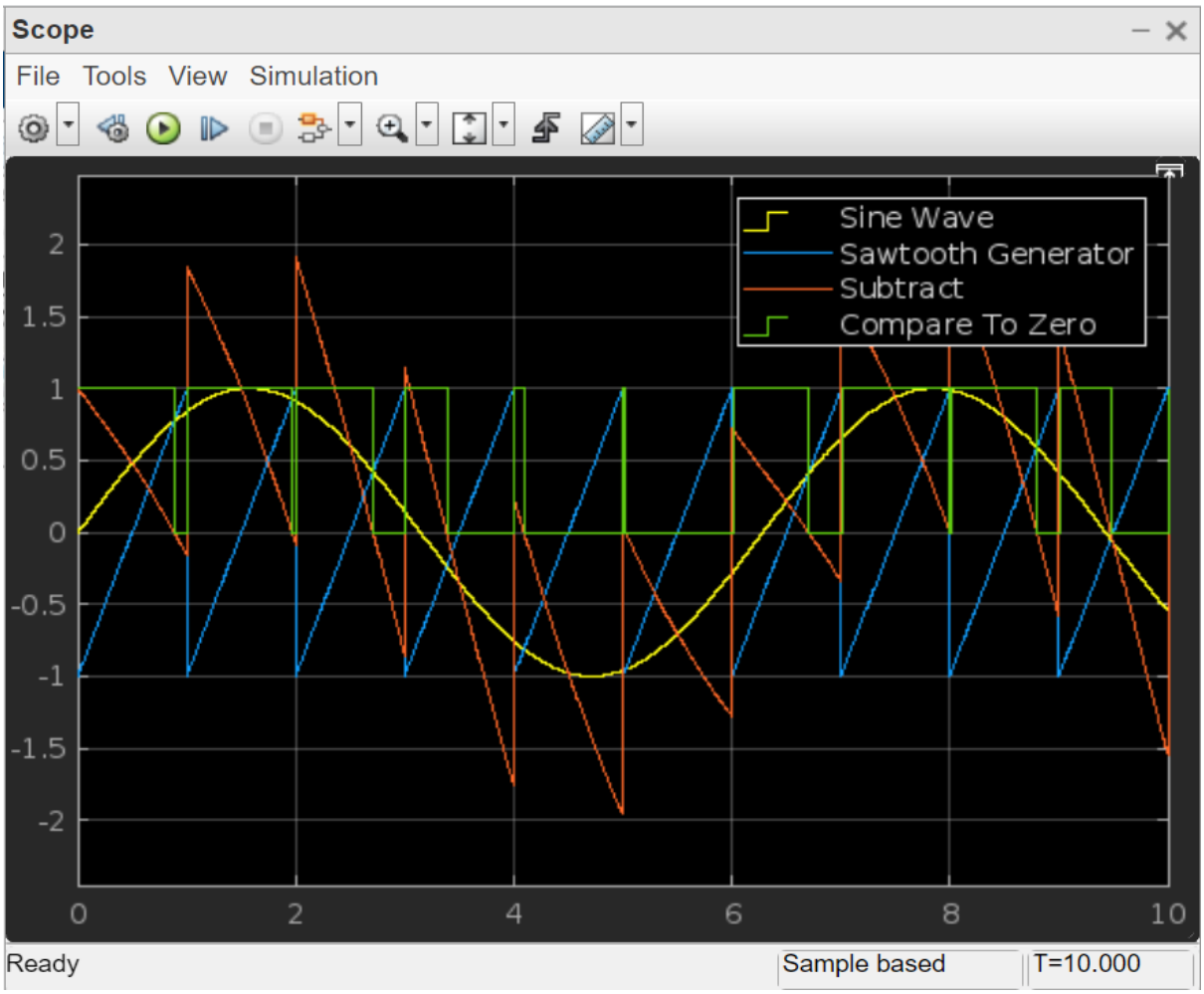
Pulse width modulation reduces the average power delivered by an electrical signal by converting the signal into discrete parts. In the PWM technique, the signal's energy is distributed through a series of pulses rather than a continuously varying (analogue) signal.

- How is a Pulse Modulation signal generated?

A pulse width modulating signal is generated using a comparator. The modulating signal forms one part of the input to the comparator, while the non-sinusoidal wave or sawtooth wave forms the other part of the input. The comparator compares two signals and generates a PWM signal as its output waveform

MATLAB SIMULINK:



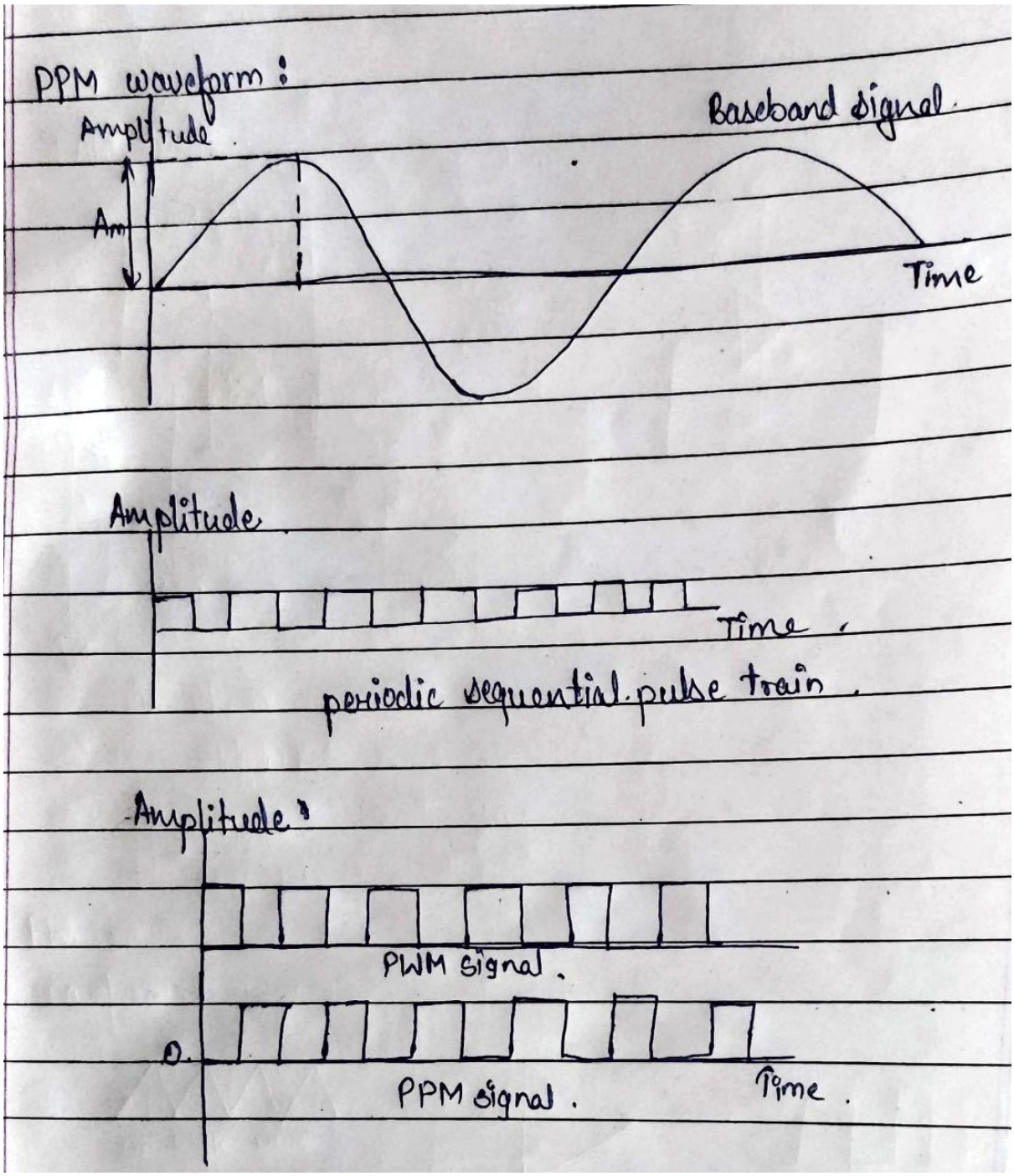


EXPERIMENT: 10

TITLE: Pulse Position Modulation

APPARATUS: Matlab Simulink

DRAW THE WAVEFORM:

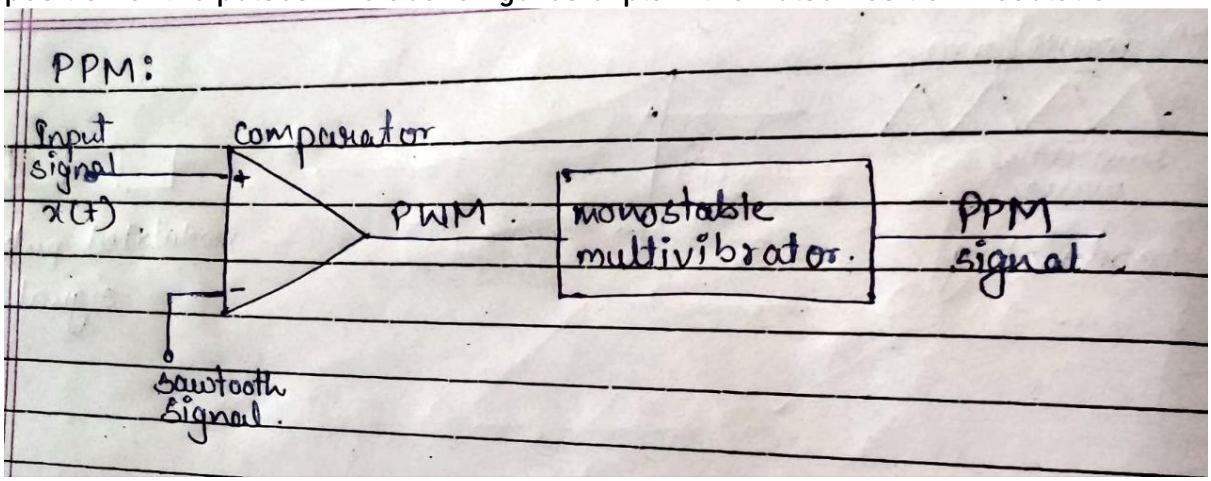


THEORY AND CIRCUIT DIAGRAM:

Pulse Position Modulation (PPM) is an analog modulating scheme in which the amplitude and width of the pulses are kept constant, while the position of each

pulse, with reference to the position of a reference pulse varies according to the instantaneous sampled value of the message signal.

The transmitter has to send synchronizing pulses (or simply sync pulses) to keep the transmitter and receiver in synchronism. These sync pulses help maintain the position of the pulses. The above figures explain the Pulse Position Modulation.



MATLAB SIMULINK: