Question 1: Explanation of Technical Indicator Parameters

1. Rate of Change (ROC) – Momentum Indicator

What it shows

ROC shows how much the price has changed compared to a few days ago. If ROC is positive, price has increased. If it is negative, price has decreased.

Parameters used

- Price: Close
- Lookback period: 14 days

Why these parameters were chosen

I used the closing price was because it gives a clear end-of-day value, which is, according to me, the best to measure. When I considered very small lookback periods, ROC changed too frequently and looked unclear. When very large periods were considered, ROC reacted too slowly to price changes. A 14-day period gave me a reasonable balance between the two.

2. Negative Volume Index (NVI) – Volume Indicator

What it shows

NVI focuses on days when trading volume decreases. On such days, the indicator moves in the same direction as price. On high-volume days, it does not change.

Parameters used

- Price: Close
- Volume: Daily volume
- Starting value: 1000

Why these parameters were chosen

I used the closing price because of the same reasons I mentioned in the previous indicator. The starting value of 1000 is the standard starting point and helps track relative movement over time. I added no extra parameters were added because NVI is defined only using price changes on low-volume days.

3. Parabolic SAR (PSAR) – Volatility Indicator

What it shows

Parabolic SAR shows trend direction. When PSAR values are below price, the trend is upward. When PSAR values are above price, the trend is downward.

Parameters used

- Prices: High and Low

- Step value: 0.02

- Maximum step value: 0.2

Why these parameters were chosen

High and Low prices were used because PSAR tracks extreme price movement during a day. I used the said values because after tuning the step and the maximum step value on trading view, I found it to be the best. The step value of 0.02 PSAR to move slowly at the beginning of a trend. As the trend continues, PSAR moves faster. The maximum value of 0.2 limits this speed so that PSAR does not react too aggressively to small price changes.