**TASK 6**

**QUESTION 1**

Considering that I am a financial analyst in a leading Investment firm, having 6 investors **A B C D E F** who invested in different markets during 14 Dec 2020 to 10 Dec 2021.

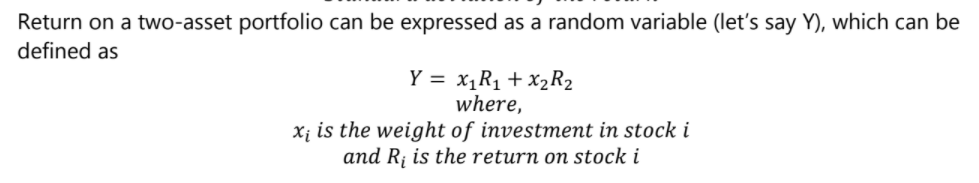
**A B C** have a single asset portfolio and **D E** and **F** have a two-asset portfolio i.e., chose to diversify.

The expected return of a portfolio is calculated by taking average of return on share price.

For a single asset portfolio :-



While,



**A** invested in HDFC High stock price. His expected return was 0.003906334498

**B** invested in ONGC Open stock price. His expected return was 0.001617082258

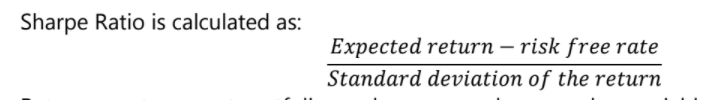
**C** invested in SpiceJet Low stock Price. His expected was -0.001583000453

**D** invested equal amount in HDFC and ONGC. His expected return was 0.0009409707086

**E** invested in ONGC and SpiceJet. His expected return was -0.0008578299884

And **F** invested in HDFC and SpiceJet. His expected return was -0.0006625132634

A measure that indicates the average return minus the risk-free return divided by the standard deviation of return on an investment is the Sharpe ratio.



The Sharpe ratio can also help explain whether a portfolio's excess returns are due to smart investment decisions or a result of too much risk.

The greater a portfolio's Sharpe ratio, the better its risk-adjusted performance. If the analysis results in a negative Sharpe ratio, it either means the risk-free rate is greater than the portfolio’s return, or the portfolio's return is expected to be negative.

**A** had a Sharpe Ratio of -3.552976601

**B** had a Sharpe Ratio of -2.079137268

**C** had a Sharpe Ratio of -1.429929996

**D** had a Sharpe Ratio of -3.355196824

**E** had a Sharpe Ratio of -2.706154259

**F** had a Sharpe Ratio of -3.177839776

From the above calculations in **A B C, C** has the best Sharpe ratio among them so he will get best return.

Diversification is a risk management strategy that mixes a wide variety of investments within a portfolio. A diversified portfolio contains a mix of distinct asset types and investment vehicles in an attempt at limiting exposure to any single asset or risk. The rationale behind this technique is that a portfolio constructed of different kinds of assets will, on average, yield higher long-term returns and lower the risk of any individual holding or security.

Among **D E F, E** will get the best return since his Sharpe ratio is better. This shows that E got the benefit of diversification as his portfolio on average yielded a higher return.

Now in between **C** and **E**, **C** has a better Sharpe Ratio i.e., higher returns despite of the risk of individual holding.