**Q1)** On considering the given data and the calculations based on it,

We get the results as follows-

**Portfolio A (HDFC):**

Expected share price: 1509.1308

Expected returns: 0.000424521

Standard Deviation: 0.015229

Sharpe Ratio: -3.25523

**Portfolio B (ONGC):**

Expected share price: 119.811

Expected returns: 0.0015269

Standard Deviation: 0.02336075

Sharpe ratio: -2.074976

**Portfolio C (SpiceJet):**

Expected share price: 77.623

Expected returns: -0.00153823

Standard Deviation: 0.02694601802

Sharpe ratio: -1.91264

**On comparing the Portfolios; A, B, C**

We can conclude that,

Portfolio A has the maximum return and also the least volatile compared to the other two.

Portfolio C has the least returns and also as volatile as Portfolio B.

Portfolio B has higher expected returns in comparison but is as volatile as Portfolio C.

***\*The above data for portfolio A, B, C has been calculated based on the close price.***

On considering the given data and the calculations based on it,

We get the results as follows-

**Portfolio D (HDFC and ONGC):**

Expected Returns: -0.00094481

Variance: 0.000214669

**Portfolio E (ONGC and SpiceJet):**

Expected Returns: 0.000112633

Variance: 0.00035463

**Portfolio F (HDFC and SpiceJet):**

Expected returns: 0.0006652173992

Variance: 0.0002552011646

**On comparing Portfolios; D, E, F**

Portfolio F had maximum expected returns on comparing with the other two portfolios. And on comparing the variances we can see Portfolio F and D have almost same variances.

Portfolio D has the least expected returns but it also has the least variance when compared to the other two portfolios.

Portfolio E has higher expected returns in comparison to Portfolio D but has variance almost as much as Portfolio D.

The advantage of investing in a single asset portfolio is only about getting higher returns if stock is chosen correctly, but the risk involved is high.

On the other hand, diversification of stocks reduces the risk involved slightly as equal amount of money is involved in two stocks, so the event of loss occurring reduces, but the returns won't be as high as in a single stock but you get a stronger security in returns because of the diversification.

Considering the above case of portfolio D, E, F, we can say that the Investor F got good benefits by the diversification of stocks by choosing HDFC and SpiceJet. As the risk involved in the entire portfolio reduces. Thus, the investor gets good returns rather than making a loss.

Q2) Task divided between the group as follows:

**Aagam**: He worked on Task 2 and 3 which included working on portfolios of ONGC and SpiceJet. Also, on Task 4 for calculating Sharpe ratios of HDFC, ONGC, SpiceJet with Tirth.

**Tirth**: He worked on Task 1 which including working on the portfolio of HDFC and on Task 4 for calculating Sharpe ratios of HDFC, ONGC, SpiceJet with Aagam. Worked on Task 6 with Aagam and Pranav for comparing the portfolios.

**Pranav**: He worked on Task 5 which included working on the portfolio of investor D, E, F and also calculated the correlation of the stocks. Worked with Aagam and Tirth on Task 4 and 6 for comparing the portfolios.

The comments made on Task 4, also the report made on Task 6, and the formatting made throughout the spread sheets was done by all 3 of us together on meets and the work was thus divided equally signifying equal participation of all group members.

Also on the teamwork, we can comment it was outstanding and each of us were ready to help each other at any given moment, also we had no conflicts throughout the time we were working on the project.