1. (a) (i) Market value of Companies before Merger

<table>
<thead>
<tr>
<th>Particulars</th>
<th>RIL</th>
<th>SIL</th>
</tr>
</thead>
<tbody>
<tr>
<td>EPS</td>
<td>₹ 2</td>
<td>Re.1</td>
</tr>
<tr>
<td>P/E Ratio</td>
<td>10</td>
<td>5</td>
</tr>
<tr>
<td>Market Price Per Share</td>
<td>₹ 20</td>
<td>₹ 5</td>
</tr>
<tr>
<td>Equity Shares</td>
<td>10,00,000</td>
<td>10,00,000</td>
</tr>
<tr>
<td>Total Market Value</td>
<td>2,00,00,000</td>
<td>50,00,000</td>
</tr>
</tbody>
</table>

(ii) Post Merger Effects on RIL

<table>
<thead>
<tr>
<th>Particulars</th>
<th>₹</th>
</tr>
</thead>
<tbody>
<tr>
<td>Post merger earnings</td>
<td>30,00,000</td>
</tr>
<tr>
<td>Exchange Ratio</td>
<td>1:4</td>
</tr>
<tr>
<td>No. of equity shares o/s (10,00,000 + 2,50,000)</td>
<td>12,50,000</td>
</tr>
<tr>
<td>EPS: 30,00,000/12,50,000</td>
<td>2.4</td>
</tr>
<tr>
<td>PE Ratio</td>
<td>10</td>
</tr>
<tr>
<td>Market Value 10 x 2.4</td>
<td>24</td>
</tr>
<tr>
<td>Total Value (12,50,000 x 24)</td>
<td>3,00,00,000</td>
</tr>
</tbody>
</table>

**Gains From Merger:**

<table>
<thead>
<tr>
<th>Particulars</th>
<th>₹</th>
</tr>
</thead>
<tbody>
<tr>
<td>Post-Merger Market Value of the Firm</td>
<td>3,00,00,000</td>
</tr>
<tr>
<td>Less: Pre-Merger Market Value</td>
<td></td>
</tr>
<tr>
<td>RIL</td>
<td>2,00,00,000</td>
</tr>
<tr>
<td>SIL</td>
<td>50,00,000</td>
</tr>
<tr>
<td>Total gains from Merger</td>
<td>50,00,000</td>
</tr>
</tbody>
</table>

Apportionment of Gains between the Shareholders:

<table>
<thead>
<tr>
<th>Particulars</th>
<th>RIL (₹)</th>
<th>SIL (₹)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Post Merger Market Value:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>10,00,000 x 24</td>
<td>2,40,00,000</td>
<td>--</td>
</tr>
<tr>
<td>2,50,000 x 24</td>
<td>-</td>
<td>60,00,000</td>
</tr>
<tr>
<td><em>Less: Pre-Merger Market Value</em></td>
<td></td>
<td></td>
</tr>
<tr>
<td>RIL</td>
<td>2,00,00,000</td>
<td>50,00,000</td>
</tr>
<tr>
<td>SIL</td>
<td>50,00,000</td>
<td></td>
</tr>
<tr>
<td>Gains from Merger:</td>
<td>40,00,000</td>
<td>10,00,000</td>
</tr>
</tbody>
</table>

Thus, the shareholders of both the companies (RIL + SIL) are better off than before

(iii) **Post-Merger Earnings:**

Increase in Earnings by 20%

New Earnings: ₹ 30,00,000 x (1+0.20)  ₹ 36,00,000

No. of equity shares outstanding: 12,50,000
EPS (₹ 36,00,000/12,50,000)  ₹ 2.88
PE Ratio 10
Market Price Per Share: = ₹2.88 x 10  ₹ 28.80

.: Shareholders will be better-off than before the merger situation.

(b) Differences between a startup and entrepreneurship

Startups are different from entrepreneurship. The major differences between them have been discussed in the following paragraphs:

(i) Start up is a part of entrepreneurship. Entrepreneurship is a broader concept and it includes a startup firm.

(ii) The main aim of startup is to build a concern, conceptualize the idea which it has developed into a reality and build a product or service. On the other hand, the major objective of an already established entrepreneurship concern is to attain opportunities with regard to the resources they currently control.

(iii) A startup generally does not have a major financial motive whereas an established entrepreneurship concern mainly operates on financial motive.

Priorities and challenges which startups in India are facing

The priority is on bringing more and more smaller firms into existence. So, the focus is on need based, instead of opportunity based entrepreneurship. Moreover, the trend is to encourage self-employment rather than large, scalable concerns.

The main challenge with the startup firms is getting the right talent. And, paucity of skilled workforce can hinder the chances of a startup organization’s growth and development. Further, startups had to comply with numerous regulations which escalates it’s cost. It leads to further delaying the chances of a breakeven or even earning some amount of profit.

2. (a) (i) To compute perfect hedge we shall compute Hedge Ratio (Δ) as follows:

\[ \Delta = \frac{C_1 - C_2}{S_1 - S_2} = \frac{150 - 0}{780 - 480} = \frac{150}{300} = 0.50 \]

Mr. Dayal should purchase 0.50 share for every 1 call option.

(ii) Value of Option today

If price of share comes out to be ₹780 then value of purchased share will be:

Sale Proceeds of Investment (0.50 x ₹ 780) ₹ 390
Loss on account of Short Position (₹ 780 – ₹ 630) ₹ 150

\[ \text{Total} = ₹ 240 \]

If price of share comes out to be ₹ 480 then value of purchased share will be:

Sale Proceeds of Investment (0.50 x ₹ 480) ₹ 240
Accordingly, Premium say P shall be computed as follows:

(₹ 300 – P) 1.025 = ₹ 240
P = ₹65.85

(iii) Expected Return on the Option

Expected Option Value = (₹ 780 – ₹ 630) x 0.60 + ₹ 0 x 0.40 = ₹ 90
Expected Rate of Return = \( \frac{90 - 65.85}{65.85} \times 100 = 36.67\% \)

(b) Final settlement amount shall be computed by using formula:

\[
N \times \left( \frac{(RR - FR)(dtm/DY)}{1 + RR(dtm/DY)} \right)
\]

Where,

\( N \) = the notional principal amount of the agreement;

\( RR \) = Reference Rate for the maturity specified by the contract prevailing on the contract settlement date;

\( FR \) = Agreed-upon Forward Rate; and

\( dtm \) = maturity of the forward rate, specified in days (FRA Days)

\( DY \) = Day count basis applicable to money market transactions which could be 360 or 365 days.

Accordingly,

If actual rate of interest after 6 months happens to be 9.60%,

\[
= \frac{(60 \text{ crore})(0.096 - 0.093)(3/12)}{[1 + 0.096(3/12)]}
\]

\[
= \frac{(60 \text{ crore})(0.00075)}{1.024}
\]

Thus banker will pay Parker & Co. a sum of Rs. 4,39,453.

If actual rate of interest after 6 months happens to be 8.80%,

\[
= \frac{(60 \text{ crore})(0.088 - 0.093)(3/12)}{[1 + 0.088(3/12)]}
\]

\[
= \frac{(60 \text{ crore})(-0.00125)}{1.022}
\]

Thus Parker & Co. will pay banker a sum of Rs. 7,33,855.

Note: It might be possible that students may solve the question on basis of days instead of months (as considered in above calculations). Further, there may be also possibility that the FRA days and Day Count convention may be taken in various plausible combinations such as 90 days/360 days, 90 days/365 days, 91 days/360 days or 91 days/365 days.

(c) The financial risk can be evaluated from different points of views as follows:

(a) **From stakeholder's point of view:** Major stakeholders of a business are equity shareholders and they view financial gearing i.e. ratio of debt in capital structure of company as risk since in event of winding up of a company they will be least prioritized.

Even for a lender, existing gearing is also a risk since company having high gearing faces more risk in default of payment of interest and principal repayment.

(b) **From Company's point of view:** From company’s point of view if a company borrows excessively or lend to someone who defaults, then it can be forced to go into liquidation.

(c) **From Government's point of view:** From Government’s point of view, the financial risk can be viewed as failure of any bank or (like Lehman Brothers) down grading of any financial institution leading to spread of distrust among society at large. Even this risk also includes
3. (a) (i) To compute the beta of 10th security first we shall compute overall weighted beta as follows:

Let weighted β be w, then

\[ w \times \frac{994450}{8767.07} \times 25 = 5 \]

w = 1.102 approximately

Let beta of 10th security is β then,

\[ 1.102 = 0.90 \times 1.10 + 0.10 \times \beta \]

β = 1.12

(ii) the main reason for the profit in cash position might due to reason that contrary to her expectation fall in the value of cash position there may be increase in value of cash position.

(b) Net Issue Size = $15 million

Gross Issue = \( \frac{\$15 \text{ million}}{0.98} \) = $15.306 million

Issue Price per GDR in ₹ (300 x 3 x 90%) ₹ 810
Issue Price per GDR in $ (₹ 810/ ₹ 60) $13.50
Dividend Per GDR (D₁) = ₹ 2 \times 3 = ₹ 6

* Assumed to be based on Face Value of ₹ 10 each share.

Net Proceeds Per GDR = ₹ 810 x 0.98 = ₹ 793.80

(a) Number of GDR to be issued

\( \frac{\$15.306 \text{ million}}{13.50} = 1.1338 \text{ million} \)

(b) Cost of GDR to Odessa Ltd.

\[ k_e = \frac{6.00}{793.80} + 0.20 = 20.76\% \]

(c) Although there are number of Islamic Finance products, but some of common products/instruments are as follows:

**Mudaraba**: The Mudaraba is a kind of profit sharing arrangement wherein one party provides 100% of the capital involved and other party provides specialized knowledge and entrusted with exclusive responsibility of working. In case there is profit it shared among them in the pre-decided ratio and if there is loss only financier will borne the same.

**Musharaka**: It is a kind of joint business venture wherein all parties provide the capital in the business in agreed ratio and also have right to participate in the business. While the loss is strictly shared in the ratio of their capital contribution, the profit is shared as per pre-agreed ratio.

**Sukuk**: It is one of the most popular Islamic financial products. It is a kind of ‘Debt Certificate’ representing ownership in business or assets and through this instrument company borrows the money. Although it appears to be conventional debt instruments but is differs in following aspects:

- To have share in profit of assets.
- To have share in the underlying assets on realization of assets.
**Ijara:** It is a kind of lease financing arrangement wherein one party transfers the asset to another party for some specific time for a specific fee which includes the capital cost of assets and profit margin of the lessor. In this arrangement, the responsibility for maintenance of the leased items remains with the lessor.

**Murabaha:** Also, known as cost plus contract it is a kind of trade credit or loans and mainly helps exporters and importers in meeting their funding requirements. The main feature of this arrangement is that profit margin of the financier is known to the buyer. In this arrangement, the financier buys the assets and sells to the client (buyer) and the buyer pays to the financier in installments consisting of the following two elements:

- Cost of asset financed.
- Financier’s profit on acquisition of asset.

**Istisna:** It is a kind of funding arrangement for long-term construction contracts wherein the client pays some initial amount and the balance amount is repayable in installments. The whole project is funded by the financier and completion of the project is delivered to the client.

**Salam:** It is analogous to a forward contract in the conventional finance. Though cash is received by the seller immediately on sale but goods as per pre-decided quality, quantity, and time shall only be delivered in future. This sale shall be at the discounted price so that the financier could make some profit out of the deal. However, it is important to note that Salam is prohibited in commodities such as gold, silver, and other types of monetary assets.

4. (a) (i) When we make risk-return analysis of different securities from U to Z, we can observe that security U gives a return of 10% at a risk level of 5%. Simultaneously, securities V and Z give the same return of 10% as of security U, but their risk levels are 6% and 7% respectively. Security X is giving only 5% return for the risk rate of 5%. Hence, security U dominates securities V, X, and Z.

Securities W and Y offer more return but it carries a higher level of risk.

Hence, securities U, W, and Y can be selected based on individual preferences.

(ii) In a situation where the perfect positive correlation exists between two securities, their risk and return can be averaged with the proportion.

Assuming the perfect correlation exists between the securities U and W, average risk and return of U and W together for proportion 4 : 1 is calculated as follows:

- Risk = \((4 \times 5\% + 1 \times 13\%) / 5 = 6.6\%\)
- Return = \((4 \times 10\% + 1 \times 15\%) / 5 = 11\%\)

Therefore:

<table>
<thead>
<tr>
<th></th>
<th>U</th>
<th>Y</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>80%</td>
<td>100%</td>
</tr>
<tr>
<td>Risk</td>
<td>6.6%</td>
<td>6%</td>
</tr>
<tr>
<td>Return</td>
<td>11%</td>
<td>11%</td>
</tr>
</tbody>
</table>

When we compare risk of 6.6% and return of 11% with security Y with 6% risk and 11% return, security Y is preferable over the portfolio of securities U and W in proportion of 4 : 1.

(b) Value of share at present = \(\frac{D_1}{k_e - g}\)

\[
= \frac{2(1.06)}{0.08 - 0.06} = \text{₹ 106}
\]
However, if the Board implement its decision, no dividend would be payable for 3 years and the dividend for year 4 would be ₹ 2.50 and growing at 7% p.a. The price of the share, in this case, would be:

\[ P_0 = \frac{2.50}{0.08 - 0.07} \times \frac{1}{(1 + 0.08)^3} = ₹ 198.46 \]

So, the price of the share is expected to increase from ₹ 106 to ₹ 198.45 after the announcement of the project. The investor can take up this situation as follows:

<table>
<thead>
<tr>
<th>Expected market price after 3 years</th>
<th>$ = \frac{2.50}{0.08 - 0.07}$</th>
<th>₹ 250.00</th>
</tr>
</thead>
<tbody>
<tr>
<td>Expected market price after 2 years</td>
<td>$\frac{2.50}{0.08 - 0.07} \times \frac{1}{(1 + 0.08)}$</td>
<td>₹ 231.48</td>
</tr>
<tr>
<td>Expected market price after 1 year</td>
<td>$\frac{2.50}{0.08 - 0.07} \times \frac{1}{(1 + 0.08)^2}$</td>
<td>₹ 214.33</td>
</tr>
</tbody>
</table>

In order to maintain his receipt at ₹ 2,000 for first 3 year, he would sell

- 10 shares in first year @ ₹ 214.33 for ₹ 2,143.30
- 9 shares in second year @ ₹ 231.48 for ₹ 2,083.32
- 8 shares in third year @ ₹ 250 for ₹ 2,000.00

At the end of 3rd year, he would be having 973 shares valued @ ₹ 250 each i.e. ₹ 2,43,250. On these 973 shares, his dividend income for year 4 would be @ ₹ 2.50 i.e. ₹ 2,432.50.

So, if the project is taken up by the company, the investor would be able to maintain his receipt of at least ₹ 2,000 for first three years and would be getting increased income thereafter.

(c) The Dow Theory is one of the oldest and most famous technical theories. It was originated by Charles Dow, the founder of Dow Jones Company in late nineteenth century. It is a helpful tool for determining the relative strength of the stock market. It can also be used as a barometer of business.

The Dow Theory is based upon the movements of two indices, constructed by Charles Dow, Dow Jones Industrial Average (DJIA) and Dow Jones Transportation Average (DJTA). These averages reflect the aggregate impact of all kinds of information on the market. The movements of the market are divided into three classifications, all going at the same time; the primary movement, the secondary movement, and the daily fluctuations. The primary movement is the main trend of the market, which lasts from one year to 36 months or longer. This trend is commonly called bear or bull market. The secondary movement of the market is shorter in duration than the primary movement, and is opposite in direction. It lasts from two weeks to a month or more. The daily fluctuations are the narrow movements from day-to-day. These fluctuations are not part of the Dow Theory interpretation of the stock market. However, daily movements must be carefully studied, along with primary and secondary movements, as they go to make up the longer movement in the market.

Thus, the Dow Theory's purpose is to determine where the market is and where is it going, although not how far or high. The theory, in practice, states that if the cyclical swings of the stock market averages are successively higher and the successive lows are higher, then the market trend is up and a bullish market exists. Contrarily, if the successive highs and successive lows are lower, then the direction of the market is down and a bearish market exists.
Charles Dow proposed that the primary uptrend would have three moves up, the first one being caused by accumulation of shares by the far-sighted, knowledgeable investors, the second move would be caused by the arrival of the first reports of good earnings by corporations, and the last move up would be caused by widespread report of financial well-being of corporations. The third stage would also see rampant speculation in the market. Towards the end of the third stage, the far-sighted investors, realizing that the high earnings levels may not be sustained, would start selling, starting the first move down of a downtrend, and as the non-sustainability of high earnings is confirmed, the second move down would be initiated and then the third move down would result from distress selling in the market.

5. (a) (i) Returns for the year

(All changes on a Per Unit Basis)

| Change in Price: | ₹ 9.45 – ₹8.75 = ₹ 0.70 |
| Dividends received: | ₹ 0.75 |
| Capital gains distribution | ₹ 0.60 |
| Total reward | ₹ 2.05 |
| Holding period reward: | ₹ 2.05 × 100 = 23.43% |

(ii) When all dividends and capital gains distributions are re-invested into additional units of the fund @ ₹8.65/unit

Dividend + Capital Gains per unit = ₹ 0.75 + ₹ 0.60 = ₹ 1.35
Total received from 300 units = ₹1.35 × 300 = ₹405/-. Additional Units Acquired

= ₹405/₹8.65
= 46.82 Units.
Total No. of Units

= 300 units + 46.82 units = 346.82 units.
Value of 346.82 units held at the end of the year

= 346.82 units × ₹ 9.45 = ₹ 3277.45

Price Paid for 300 Units at the beginning of the year

= 300 units × ₹8.75 = ₹2,625.00

**Holding Period Reward**

₹ (3277.45 – 2625.00) = ₹652.45

Holding Period Reward

= ₹ 652.45 × 100 = 24.85%

₹ 2625.00

**Conclusion:** Since the holding period reward is more in terms of percentage in option-two i.e., reinvestment of distributions at an average NAV of ₹8.65 per unit, this option is preferable.
<table>
<thead>
<tr>
<th>Date</th>
<th>Sensex</th>
<th>EMA for Previous day</th>
<th>1-2</th>
<th>3×0.062</th>
<th>EMA 2 + 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>6</td>
<td>14522</td>
<td>15000</td>
<td>(478)</td>
<td>(29.636)</td>
<td>14970.364</td>
</tr>
<tr>
<td>7</td>
<td>14925</td>
<td>14970.364</td>
<td>(45.364)</td>
<td>(2.812)</td>
<td>14967.55</td>
</tr>
<tr>
<td>10</td>
<td>15222</td>
<td>14967.55</td>
<td>254.45</td>
<td>15.776</td>
<td>14983.32</td>
</tr>
<tr>
<td>11</td>
<td>16000</td>
<td>14983.32</td>
<td>1016.68</td>
<td>63.034</td>
<td>15046.354</td>
</tr>
<tr>
<td>12</td>
<td>16400</td>
<td>15046.354</td>
<td>1353.646</td>
<td>83.926</td>
<td>15130.28</td>
</tr>
<tr>
<td>13</td>
<td>17000</td>
<td>15130.28</td>
<td>1869.72</td>
<td>115.922</td>
<td>15246.202</td>
</tr>
<tr>
<td>17</td>
<td>18000</td>
<td>15246.202</td>
<td>2753.798</td>
<td>170.735</td>
<td>15416.937</td>
</tr>
</tbody>
</table>

**Conclusion** – The market is bullish. The market is likely to remain bullish for short term to medium term if other factors remain the same. On the basis of this indicator (EMA) the investors/brokers can take long position.

**Securitization Instruments**

On the basis of different maturity characteristics, the securitized instruments can be divided into following three categories:

(i) **Pass Through Certificates (PTCs):** As the title suggests originator (seller of the assets) transfers the entire receipt of cash in form of interest or principal repayment from the assets sold. Thus, these securities represent direct claim of the investors on all the assets that has been securitized through SPV.

Since all cash flows are transferred the investors carry proportional beneficial interest in the asset held in the trust by SPV.
It should be noted that since it is a direct route any prepayment of principal is also proportionately distributed among the securities holders. Further, due to these characteristics on completion of securitization by the final payment of assets, all the securities are terminated simultaneously.

Skewness of cash flows occurs in early stage if principals are repaid before the scheduled time.

(ii) Pay Through Security (PTS): As mentioned earlier, since, in PTCs all cash flows are passed to the performance of the securitized assets. To overcome this limitation and limitation to single mature there is another structure i.e. PTS.

In contrast to PTC in PTS, SPV debt securities backed by the assets and hence it can restructure different tranches from varying maturities of receivables.

In other words, this structure permits desynchronization of servicing of securities issued from cash flow generating from the asset. Further, this structure also permits the SPV to reinvest surplus funds for short term as per their requirement.

Since, in Pass Through, all cash flow immediately in PTS in case of early retirement of receivables plus cash can be used for short term yield. This structure also provides the freedom to issue several debt trances with varying maturities.

(iii) Stripped Securities: Stripped Securities are created by dividing the cash flows associated with underlying securities into two or more new securities. Those two securities are as follows:

(i) Interest Only (IO) Securities
(ii) Principle Only (PO) Securities

As each investor receives a combination of principal and interest, it can be stripped into two portions of Interest and Principle.

Accordingly, the holder of IO securities receives only interest while PO security holder receives only principal. Being highly volatile in nature these securities are less preferred by investors. In case yield to maturity in market rises, PO price tends to fall as borrower prefers to postpone the payment on cheaper loans. Whereas if interest rate in market falls, the borrower tends to repay the loans as they prefer to borrow fresh at lower rate of interest. In contrast, value of IO’s securities increases when interest rate goes up in the market as more interest is calculated on borrowings.

However, when interest rate due to prepayments of principals, IO’s tends to fall. Thus, from the above, it is clear that it is mainly perception of investors that determines the prices of IOs and POs.

6. (a) (i) Working for calculation of WACC

<table>
<thead>
<tr>
<th></th>
<th>Orange</th>
<th>Grape</th>
<th>Apple</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total debt</td>
<td>80,000</td>
<td>50,000</td>
<td>20,000</td>
</tr>
<tr>
<td>Post tax Cost of debt</td>
<td>10.4%</td>
<td>8.45%</td>
<td>9.75%</td>
</tr>
<tr>
<td>Equity Fund</td>
<td>20,000</td>
<td>50,000</td>
<td>80,000</td>
</tr>
</tbody>
</table>

**WACC**

Orange: \((10.4 \times 0.8) + (26 \times 0.2) = 13.52\%\)

Grape: \((8.45 \times 0.5) + (22 \times 0.5) = 15.225\%\)

Apple: \((9.75 \times 0.2) + (20 \times 0.8) = 17.95\%\)
(ii)

<table>
<thead>
<tr>
<th></th>
<th>Orange</th>
<th>Grape</th>
<th>Apple</th>
</tr>
</thead>
<tbody>
<tr>
<td>WACC</td>
<td>13.52</td>
<td>15.225</td>
<td>17.95</td>
</tr>
<tr>
<td>EVA [\text{EBIT} (1-T) - (\text{WACC} \times \text{Invested Capital})]</td>
<td>2.730</td>
<td>1.025</td>
<td>-1.700</td>
</tr>
</tbody>
</table>

(iii) Orange would be considered as the best investment since the EVA of the company is highest and its weighted average cost of capital is the lowest.

(iv) Estimated Price of each company shares

<table>
<thead>
<tr>
<th></th>
<th>Orange</th>
<th>Grape</th>
<th>Apple</th>
</tr>
</thead>
<tbody>
<tr>
<td>EBIT (₹)</td>
<td>25,000</td>
<td>25,000</td>
<td>25,000</td>
</tr>
<tr>
<td>Interest (₹)</td>
<td>12,800</td>
<td>6,500</td>
<td>3,000</td>
</tr>
<tr>
<td>Taxable Income (₹)</td>
<td>12,200</td>
<td>18,500</td>
<td>22,000</td>
</tr>
<tr>
<td>Tax 35% (₹)</td>
<td>4,270</td>
<td>6,475</td>
<td>7,700</td>
</tr>
<tr>
<td>Net Income (₹)</td>
<td>7,930</td>
<td>12,025</td>
<td>14,300</td>
</tr>
<tr>
<td>Shares</td>
<td>6,100</td>
<td>8,300</td>
<td>10,000</td>
</tr>
<tr>
<td>EPS (₹)</td>
<td>1.3</td>
<td>1.448795</td>
<td>1.43</td>
</tr>
<tr>
<td>Stock Price (EPS x PE Ratio) (₹)</td>
<td>14.30</td>
<td>15.94</td>
<td>15.73</td>
</tr>
</tbody>
</table>

Since the three entities have different capital structures they would be exposed to different degrees of financial risk. The PE ratio should therefore be adjusted for the risk factor.

Alternative Answer

<table>
<thead>
<tr>
<th></th>
<th>Orange</th>
<th>Grape</th>
<th>Apple</th>
</tr>
</thead>
<tbody>
<tr>
<td>Net Income (Given) (₹)</td>
<td>8,970</td>
<td>12,350</td>
<td>14,950</td>
</tr>
<tr>
<td>Shares</td>
<td>6,100</td>
<td>8,300</td>
<td>10,000</td>
</tr>
<tr>
<td>EPS (₹)</td>
<td>1.4705</td>
<td>1.488</td>
<td>1.495</td>
</tr>
<tr>
<td>Stock Price (EPS x PE Ratio) (₹)</td>
<td>16.18</td>
<td>16.37</td>
<td>16.45</td>
</tr>
</tbody>
</table>

(v) Market Capitalisation

Estimated Stock Price (₹) | 14.30  | 15.94  | 15.73  |
No. of shares             | 6,100  | 8,300  | 10,000 |
Estimated Market Cap (₹)  | 87,230 | 1,32,302| 1,57,300|

Alternative Answer

Estimated Stock Price (₹) | 16.18  | 16.37  | 16.45  |
No. of shares             | 6,100  | 8,300  | 10,000 |
Estimated Market Cap (₹)  | 98,698 | 1,35,871| 1,64,500|

(b) Conversion Price = ₹ 50 x 17 = ₹ 850

Intrinsic Value = ₹ 850

Accordingly the yield (r) on the bond shall be:

₹ 850 = ₹ 100 PVAF \( r, 10 \) + ₹ 1000 PVF \( r, 10 \)

Let us discount the cash flows by 11%

\begin{align*}
850 & = 100 \times 5.889 + 1000 \times 0.295 \\
& = 1000 \times 0.295 + 850 \\
\end{align*}
Let us discount the cash flows by 11%  
\[ 850 = 100 \text{ PVAF (11\%, 10)} + 1000 \text{ PVF (11\%, 10)} \]
\[ = 100 \times 5.889 + 1000 \times 0.352 \]
\[ = 90.90 \]

Now let us discount the cash flows by 13%  
\[ 850 = 100 \text{ PVAF (13\%, 10)} + 1000 \text{ PVF (13\%, 10)} \]
\[ = 100 \times 5.426 + 1000 \times 0.295 \]
\[ = -12.40 \]

Accordingly, IRR  
\[ 11\% + \frac{90.90}{90.90 - (-12.40)} \times (13\% - 11\%) \]
\[ 11\% + \frac{90.90}{103.30} \times (13\% - 11\%) \]
\[ = 12.76\% \]

The spread from comparable bond = 12.76\% - 11.80\% = 0.96\%

(c) In the given case, the exchange rates are indirect. These can be converted into direct rates as follows:

Spot rate  
GBP  \quad = \quad \frac{1}{USD1.5673} \quad \text{to} \quad \frac{1}{USD1.5673} \quad \text{GBP} \]
USD  \quad = \quad GBP 0.64033 \quad - \quad GBP 0.64066

6 months’ forward rate  
GBP  \quad = \quad \frac{1}{USD1.5455} \quad \text{to} \quad \frac{1}{USD1.5609} \quad \text{GBP} \]
USD  \quad = \quad GBP 0.64704 \quad - \quad GBP 0.64066

Payoff in 3 alternatives  

i. Forward Cover  
Amount payable \quad USD 3,64,897  
Forward rate \quad GBP 0.64704  
Payable in GBP \quad GBP 2,36,103

ii. Money market Cover  
Amount payable \quad USD 3,64,897  
PV @ 4.5\% for 6 months i.e. \[ \frac{1}{1.0225} = 0.9779951 \] USD 3,56,867  
Spot rate purchase \quad GBP 0.64033  
Borrow GBP 3,56,867 x 0.64033 \quad GBP 2,28,512
Interest for 6 months @ 7 %  
Payable after 6 months  

7,998  
GBP 2,36,510

iii. Currency options

Amount payable  
USD 3,64,897

Unit in Options contract  
GBP 12,500

Value in USD at strike rate of 1.70 (GBP 12,500 x 1.70)  
USD 21,250

Number of contracts USD 3,64,897/ USD 21,250  
17.17

Exposure covered USD 21,250 x 17  
USD 3,61,250

Exposure to be covered by Forward (USD 3,64,897 – USD 3,61,250)  
USD 3,647

Options premium 17 x GBP 12,500 x 0.096  
USD 20,400

Premium in GBP (USD 20,400 x 0.64033)  
GBP 13,063

Total payment in currency option

Payment under option (17 x 12,500)  
GBP 2,12,500

Premium payable  
GBP 13,063

Payment for forward cover (USD 3,647 x 0.64704)  
GBP 2,360

GBP 2,27,923

The company should take currency option for hedging the risk.

Note: Even interest on Option Premium can also be considered in the above solution.