MOCK TEST PAPER – 2
FINAL COURSE: GROUP – I
PAPER – 2: STRATEGIC FINANCIAL MANAGEMENT (NEW COURSE)
SUGGESTED ANSWERS/HINTS

1. (a) Market price per share (MPS) = EPS X P/E ratio or P/E ratio = MPS/EPS

   (i) Calculation of EPS, P/E ratio, ROE and BVPS of BA Ltd. and DA Ltd.

<table>
<thead>
<tr>
<th></th>
<th>BA Ltd.</th>
<th>DA Ltd.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Earnings After Tax</td>
<td>(EAT)</td>
<td>Rs. 2,10,000</td>
</tr>
<tr>
<td>No. of Shares</td>
<td>(N)</td>
<td>100000</td>
</tr>
<tr>
<td>EPS</td>
<td>(EAT/N)</td>
<td>Rs. 2.10</td>
</tr>
<tr>
<td>Market price per share</td>
<td>(MPS)</td>
<td>40</td>
</tr>
<tr>
<td>P/E Ratio</td>
<td>(MPS/EPS)</td>
<td>19.05</td>
</tr>
<tr>
<td>Equity Funds</td>
<td>(EF)</td>
<td>Rs. 12,00,000</td>
</tr>
<tr>
<td>BVPS</td>
<td>(EF/N)</td>
<td>12</td>
</tr>
<tr>
<td>ROE</td>
<td>(EAT/EF) × 100</td>
<td>17.50%</td>
</tr>
</tbody>
</table>

   (ii) Calculation of growth rates in EPS for BA Ltd. and DA Ltd.

   Retention Ratio (1-D/P ratio) = 0.6          0.4
   Growth Rate (ROE × Retention Ratio) = 10.50% 4.95%

   (iii) Evaluation of justifiable equity shares exchange ratio

   (a) Intrinsic value based = Rs.20 / Rs.40 = 0.5:1 (upper limit)
   (b) Market price based = MPS_{DA}/MPS_{BA} = Rs.15 / Rs.40 =0.375:1(lower limit)

   Since, BA Ltd. has a higher EPS, ROE, P/E ratio and even higher EPS growth expectations, the negotiable terms would be expected to be closer to the lower limit, based on the existing share prices.

   (iv) Calculation of post-merger EPS and its effects

<table>
<thead>
<tr>
<th>Particulars</th>
<th>BA Ltd.</th>
<th>DA Ltd.</th>
<th>Combined</th>
</tr>
</thead>
<tbody>
<tr>
<td>EAT (Rs.)</td>
<td>(i) 2,10,000</td>
<td>99,000</td>
<td>3,09,000</td>
</tr>
<tr>
<td>Share outstanding</td>
<td>(ii) 100000</td>
<td>80000</td>
<td>132000*</td>
</tr>
<tr>
<td>EPS (Rs.)</td>
<td>(i) / (ii) 2.1</td>
<td>1.2375</td>
<td>2.341</td>
</tr>
<tr>
<td>EPS Accretion (Dilution)</td>
<td>0.241</td>
<td>(0.301**)</td>
<td></td>
</tr>
</tbody>
</table>

   * Shares outstanding (combined) = 100000 shares + (.40 × 80000)= 132000 shares
   ** EPS claim per old share = Rs.2.34 × 0.4 = Rs. 0.936
   EPS dilution = Rs.1.2375 – Rs. 0.936 = Rs. 0.3015

   (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) Recommendation of Expected Share Price

\[ \text{Expected Share Price} = \text{Rs.}120 \times 0.05 + \text{Rs.}140 \times 0.20 + \text{Rs.}160 \times 0.50 + \text{Rs.}180 \times 0.10 + \text{Rs.}190 \times 0.15 \]

\[ = \text{Rs.}6 + \text{Rs.}28 + \text{Rs.}80 + \text{Rs.}18 + \text{Rs.}28.50 = \text{Rs.}160.50 \]

(ii) Analysis of Value of Call Option

In case if exercise price prevail the value of call option shall be Nil (Rs.150 - Rs.150) as strike price and spot price are same.

(iii) Calculation of expected Value of Call Option if the option is held till maturity

<table>
<thead>
<tr>
<th>Expected price (X)</th>
<th>Value of call (C)</th>
<th>Probability (P)</th>
<th>CP</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rs. 120</td>
<td>0</td>
<td>0.05</td>
<td>0</td>
</tr>
<tr>
<td>Rs. 140</td>
<td>0</td>
<td>0.20</td>
<td>0</td>
</tr>
<tr>
<td>Rs. 160</td>
<td>Rs. 10</td>
<td>0.50</td>
<td>Rs. 5</td>
</tr>
<tr>
<td>Rs. 180</td>
<td>Rs. 30</td>
<td>0.10</td>
<td>Rs. 3</td>
</tr>
<tr>
<td>Rs. 190</td>
<td>Rs. 40</td>
<td>0.15</td>
<td>Rs. 6</td>
</tr>
</tbody>
</table>

Total \( \text{Rs.} 14 \)

Alternatively, it can also be calculated as follows:

Expected Value of Option

\[ (120 - 150) \times 0.1 \quad \text{Not Exercised*} \]
\[ (140 - 150) \times 0.2 \quad \text{Not Exercised*} \]
\[ (160 - 150) \times 0.5 \quad 5 \]
\[ (180 - 150) \times 0.1 \quad 3 \]
\[ (190 - 150) \times 0.15 \quad 6 \]
\[ 14 \]

* If the strike price goes below Rs. 150, option is not exercised at all.

(b) Analysis of hedging of interest rate risk thorough Cap Option

First of all we shall calculate premium payable to bank as follows:

\[ P = \frac{rp}{(1+i)^t} X A \text{ or } \frac{rp}{PVAF(3.5\% \times 4)} \times A \]
Where

\[ P = \text{Premium} \]
\[ A = \text{Principal Amount} \]
\[ r_p = \text{Rate of Premium} \]
\[ i = \text{Fixed Rate of Interest} \]
\[ t = \text{Time} \]

\[
= \frac{0.01}{(1/0.035) - \frac{1}{0.035 \times 1.035}} \times \£15,000,000 \quad \text{or} \quad \frac{0.01}{(0.966 + 0.933 + 0.901 + 0.871)} \times \£15,000,000
\]

\[
= \frac{0.01}{(28.5714) - \frac{1}{0.04016}} \times \£15,000,000 \quad \text{or} \quad \£150,000 \left( \frac{1}{3.671} \right) = \£40,861
\]

Please note above solution has been worked out on the basis of four decimal points at each stage.

Now we see the net payment received from bank

<table>
<thead>
<tr>
<th>Reset Period</th>
<th>Additional interest due to rise in interest rate</th>
<th>Amount received from bank</th>
<th>Premium paid to bank</th>
<th>Net Amt. received from bank</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>£ 75,000</td>
<td>£ 75,000</td>
<td>£ 40,861</td>
<td>£34,139</td>
</tr>
<tr>
<td>2</td>
<td>£112,500</td>
<td>£112,500</td>
<td>£40,861</td>
<td>£71,639</td>
</tr>
<tr>
<td>3</td>
<td>£150,000</td>
<td>£150,000</td>
<td>£40,861</td>
<td>£109,139</td>
</tr>
<tr>
<td>TOTAL</td>
<td>£337,500</td>
<td>£337,500</td>
<td>£122,583</td>
<td>£214,917</td>
</tr>
</tbody>
</table>

Analysis: Thus, from above it can be seen that interest rate risk amount of £337,500 reduced by £214,917 by using of Cap option.

**Note:** It may be possible that student may compute upto three decimal points or may use different basis. In such case their answer is likely to be different.

(c) Explanation of four features of VAR are as below:

(i) **Components of Calculations:** VAR calculation is based on following three components:

(a) Time Period

(b) Confidence Level – Generally 95% and 99%

(c) Loss in percentage or in amount

(ii) **Statistical Method:** It is a type of statistical tool based on Standard Deviation.

(iii) **Time Horizon:** VAR can be applied for different time horizons say one day, one week, one month and so on.

(iv) **Probability:** Assuming the values are normally attributed, probability of maximum loss can be predicted.

3. (a) (i) **Calculation of Beta of Portfolio**

<table>
<thead>
<tr>
<th>Investment</th>
<th>No. of shares</th>
<th>Market Price</th>
<th>Market Value</th>
<th>Dividend Yield</th>
<th>Dividend</th>
<th>Composition</th>
<th>( \beta )</th>
<th>Weighted ( \beta )</th>
</tr>
</thead>
<tbody>
<tr>
<td>I.</td>
<td>60,000</td>
<td>4.29</td>
<td>2,57,400</td>
<td>19.50%</td>
<td>50,193</td>
<td>0.2339</td>
<td>1.16</td>
<td>0.27</td>
</tr>
<tr>
<td>II.</td>
<td>80,000</td>
<td>2.92</td>
<td>2,33,600</td>
<td>24.00%</td>
<td>56,064</td>
<td>0.2123</td>
<td>2.28</td>
<td>0.48</td>
</tr>
<tr>
<td>III.</td>
<td>1,00,000</td>
<td>2.17</td>
<td>2,17,000</td>
<td>17.50%</td>
<td>37,975</td>
<td>0.1972</td>
<td>0.90</td>
<td>0.18</td>
</tr>
<tr>
<td>IV.</td>
<td>1,25,000</td>
<td>3.14</td>
<td>3,92,500</td>
<td>26.00%</td>
<td>1,02,050</td>
<td>0.3566</td>
<td>1.50</td>
<td>0.53</td>
</tr>
<tr>
<td>TOTAL</td>
<td></td>
<td></td>
<td>11,00,500</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

\[ \text{Composition} = \frac{\text{Market Value}}{\text{Market Price}} \]

\[ \text{Weighted } \beta = \sum (\text{Composition} \times \beta) \]
Return of the Portfolio \[
\frac{246,282}{11,00,050} = 0.2238
\]

Beta of Port Folio 1.46

Market Risk implicit

\[0.2238 = 0.11 + \beta \times (0.19 - 0.11)\]

Or, \[0.08 \beta + 0.11 = 0.2238\]

\[\beta = \frac{0.2238 - 0.11}{0.08} = 1.42\]

Market β implicit is 1.42 while the port folio β is 1.46. Thus the portfolio is marginally risky compared to the market.

(ii) Reconciliation of the decision of XYZ about whether he should change the composition of its portfolio

The decision regarding change of composition may be taken by comparing the dividend yield (given) and the expected return as per CAPM as follows:

Expected return \( R_s \) as per CAPM is:

\[ R_s = I_{RF} + (R_M - I_{RF}) \beta \]

For investment I, \( R_s \) = \( I_{RF} + (R_M - I_{RF}) \beta \)

\[ = 0.11 + (0.19 - 0.11) \times 1.16 \]

\[ = 20.28\% \]

For investment II, \( R_s \) = \( 0.11 + (0.19 - 0.11) \times 2.28 \)

\[ = 29.24\% \]

For investment III, \( R_s \) = \( 0.11 + (0.19 - 0.11) \times 0.90 \)

\[ = 18.20\% \]

For investment IV, \( R_s \) = \( 0.11 + (0.19 - 0.11) \times 1.50 \)

\[ = 23\% \]

Comparison of dividend yield with the expected return \( R_s \) shows that the dividend yields of investment I, II and III are less than the corresponding \( R_s \). So, these investments are over-priced and should be sold by the investor. However, in case of investment IV, the dividend yield is more than the corresponding \( R_s \) so, XYZ Ltd. should increase its proportion.

(b) Calculation of Number of GDR to be issued and Cost of GDR to Odessa Ltd

Net Issue Size = $15 million

Gross Issue = \( \frac{150 \text{ million}}{0.98} \) = $15.306 million

Issue Price per GDR in Rs. (300 x 3 x 90%) Rs. 810

Issue Price per GDR in $ (Rs. 810/ Rs. 60) $13.50

Dividend Per GDR (D1) = Rs. 2* x 3 = Rs. 6

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

Net Proceeds Per GDR = Rs. 810 x 0.98 = Rs. 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) Description of any four constituents of International Financial Centre (IFC) is as follows:

(i) **Highly developed Infrastructure**: A leading edge infrastructure is prerequisite for creating a platform to offer internationally competitive financial services.

(ii) **Stable Political Environment**: Destabilized political environment brings country risk investment by foreign nationals. Hence, to accelerate foreign participation in growth of financial center, stable political environment is prerequisite.

(iii) **Strategic Location**: The geographical location of the finance center should be strategic such as near to airport, seaport and should have friendly weather.

(iv) **Quality Life**: The quality of life at the center should be good as center retains highly paid professional from own country as well from outside.

4. (a) (i) **Calculation of Expected Return from Portfolio**

<table>
<thead>
<tr>
<th>Security</th>
<th>Beta (β)</th>
<th>Expected Return (r) as per CAPM</th>
<th>Amount (Rs. Lakhs)</th>
<th>Weights (w)</th>
<th>wr</th>
</tr>
</thead>
<tbody>
<tr>
<td>Moderate</td>
<td>0.50</td>
<td>8%+0.50(10% - 8%) = 9%</td>
<td>60</td>
<td>0.115</td>
<td>1.035</td>
</tr>
<tr>
<td>Better</td>
<td>1.00</td>
<td>8%+1.00(10% - 8%) = 10%</td>
<td>80</td>
<td>0.154</td>
<td>1.540</td>
</tr>
<tr>
<td>Good</td>
<td>0.80</td>
<td>8%+0.80(10% - 8%) = 9.60%</td>
<td>100</td>
<td>0.192</td>
<td>1.843</td>
</tr>
<tr>
<td>Very Good</td>
<td>1.20</td>
<td>8%+1.20(10% - 8%) = 10.40%</td>
<td>120</td>
<td>0.231</td>
<td>2.402</td>
</tr>
<tr>
<td>Best</td>
<td>1.50</td>
<td>8%+1.50(10% - 8%) = 11%</td>
<td>160</td>
<td>0.308</td>
<td>3.388</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td></td>
<td><strong>520</strong></td>
<td></td>
<td><strong>10.208</strong></td>
</tr>
</tbody>
</table>

Thus Expected Return from Portfolio 10.208% say 10.21%.

Alternatively, it can be computed as follows:

\[
\text{Average } \beta = 0.50 \times \frac{60}{520} + 1.00 \times \frac{80}{520} + 0.80 \times \frac{100}{520} + 1.20 \times \frac{120}{520} + 1.50 \times \frac{160}{520} = 1.104
\]

As per CAPM

\[
\text{Expected Return} = 0.08 + 1.104(0.10 - 0.08) = 0.10208 \text{ i.e. 10.208%}
\]

(ii) **Evaluation of the advice of replacing Security ‘Better’ with NIFTY.**

As computed above the expected return from Better is 10% same as from Nifty, hence there will be no difference even if the replacement of security is made. The main logic behind this neutrality is that the beta of security ‘Better’ is 1 which clearly indicates that this security shall yield same return as market return.

(b) **Evaluation of:**

(i) **The price at which the shares can be repurchased**

Let P be the buyback price decided by Abhishek Ltd.

Market Capitalisation After Buyback:

\[
1.1 \times P (\text{Original Shares} - \text{Shares Bought back})
\]

\[
= 1.1P (10\text{Lakhs} - \frac{30\% \text{of 90Lakhs}}{P})
\]

\[
= 11 \text{Lakhs} \times P - 27 \text{Lakhs} \times 1.1 = 11 \text{ lakhs} \times P - 29.7 \text{ lakhs}
\]
Market capitalization rate after buyback is 200 lakhs.
Thus, we have:

11 Lakhs \times P – 29.7 lakhs = Rs.200 lakhs

or 11P = 200 + 29.7

or P = \frac{229.7}{11} = \text{Rs} 20.88

(ii) Number of shares than can be re-purchased
The Number of shares to be bought back:

\frac{27 \text{Lakhs}}{20.88} = 1.29 \text{ lakhs (Approximately)}

(iii) The impact of share re-purchase on the EPS
New Equity Shares

= (10 – 1.29) lakhs = 8.71 lakhs

\text{EPS} = \frac{3 \times 10 \text{lakhs}}{8.71 \text{lakhs}} = \frac{30L}{8.71L} = \text{Rs}.3.44

Thus EPS of Abhishek Ltd., increases to \text{Rs}.3.44

(c) Random Walk Theory
Random Walk hypothesis states that the behaviour of stock market prices is unpredictable and that there is no relationship between the present prices of the shares and their future prices. Basic premises of the theory are as follows:

- Prices of shares in stock market can never be predicted. The reason is that the price trends are not the result of any underlying factors, but that they represent a statistical expression of past data.
- There may be periodical ups or downs in share prices, but no connection can be established between two successive peaks (high price of stocks) and troughs (low price of stocks).

5. (a) Net Asset Value per unit of the Scheme Rudolf

<table>
<thead>
<tr>
<th>Shares</th>
<th>No. of shares</th>
<th>Price</th>
<th>Amount (Rs.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nairobi Ltd.</td>
<td>25,000</td>
<td>20.00</td>
<td>5,00,000</td>
</tr>
<tr>
<td>Dakar Ltd.</td>
<td>35,000</td>
<td>300.00</td>
<td>1,05,00,000</td>
</tr>
<tr>
<td>Senegal Ltd.</td>
<td>29,000</td>
<td>380.00</td>
<td>1,10,20,000</td>
</tr>
<tr>
<td>Cairo Ltd.</td>
<td>40,000</td>
<td>500.00</td>
<td>2,00,00,000</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>4,20,20,000</td>
</tr>
<tr>
<td>Less: Accrued Expenses</td>
<td></td>
<td></td>
<td>2,50,000</td>
</tr>
<tr>
<td>Other Liabilities</td>
<td></td>
<td></td>
<td>2,00,000</td>
</tr>
<tr>
<td>Total Value</td>
<td></td>
<td></td>
<td>4,15,70,000</td>
</tr>
<tr>
<td>No. of Units</td>
<td></td>
<td></td>
<td>10,00,000</td>
</tr>
<tr>
<td>NAV per Unit (4,15,70,000/10,00,000)</td>
<td></td>
<td></td>
<td>41.57</td>
</tr>
</tbody>
</table>

(b) (i) Calculation of Stock value or conversion value of bond

12 \times 20 = \text{Rs}. 240
(ii) **Calculation of Percentage of the downside risk**

\[
\frac{\text{Rs. 265} - \text{Rs. 235}}{\text{Rs. 235}} = 0.1277 \text{ or } 12.77\% \quad \text{or} \quad \frac{\text{Rs. 265} - \text{Rs. 235}}{\text{Rs. 265}} = 0.1132 \text{ or } 11.32\%
\]

This ratio gives the percentage price decline experienced by the bond if the stock becomes worthless.

(iii) **Calculation of Conversion Premium**

\[
\frac{\text{Market Price} - \text{Conversion Value}}{\text{Conversion Value}} \times 100
\]

\[
\frac{\text{Rs. 265} - \text{Rs. 240}}{\text{Rs. 240}} \times 100 = 10.42\%
\]

(iv) **Calculation of Conversion Parity Price**

\[
\frac{\text{Bond Price}}{\text{No. of Shares on Conversion}}
\]

\[
\frac{\text{Rs. 265}}{20} = \text{Rs. 13.25}
\]

This indicates that if the price of shares rises to Rs. 13.25 from Rs. 12 the investor will neither gain nor lose on buying the bond and exercising it. Observe that Rs. 1.25 (Rs. 13.25 – Rs. 12.00) is 10.42% of Rs. 12, the Conversion Premium.

(c) **Characteristics of Financial Instruments**

The important characteristics of financial instruments are enumerated as below:

(a) **Liquidity**: Financial instruments provide liquidity. These can be easily and quickly converted into cash.

(b) **Marketing**: Financial instruments facilitate easy trading on the market. They have a ready market.

(c) **Collateral value**: Financial instruments can be pledged for getting loans.

(d) **Transferability**: Financial instruments can be transferred from one person to another.

(e) **Maturity period**: The maturity period of financial instruments may be short term, medium term or long term.

(f) **Transaction cost**: Financial instruments involve buying and selling cost. The buying and selling costs are called transaction costs.

(g) **Risk**: Financial instruments carry risk. Equity based instruments are riskier in comparison to debt based instruments because the payment of dividend is uncertain. A company may not declare dividend in a particular year. However, payment of principle or interest is more or less certain unless the company gets insolvent.

(h) **Future trading**: Financial instruments facilitate future trading so as to cover risks arising out of price fluctuations, interest rate fluctuations etc.

OR

(c) **Problems faced in growth of Securitization of instruments especially in Indian context is as follows:**

(i) **Stamp Duty**: Stamp Duty is one of the obstacle in India. Under Transfer of Property Act, 1882, a mortgage debt stamp duty which even goes upto 12% in some states of India and this
impeded the growth of securitization in India. It should be noted that since pass through certificate does not evidence any debt only able to receivable, they are exempted from stamp duty.

Moreover, in India, recognizing the special nature of securitized instruments in some states has reduced the stamp duty on them.

(ii) **Taxation:** Taxation is another area of concern in India. In the absence of any specific provision relating to securitized instruments in Income Tax Act experts’ opinion differ a lot. Some are of opinion that in SPV as a trustee is liable to be taxed in a representative capacity then other are of view that instead of SPV, investors will be taxed on their share of income. Clarity is also required on the issues of capital gain implications on passing payments to the investors.

(iii) **Accounting:** Accounting and reporting of securitized assets in the books of originator is another area of concern. Although securitization is slated to an off-balance sheet instrument but in true sense receivables are removed from originator’s balance sheet. Problem arises especially when assets are transferred without recourse.

(iv) **Lack of standardization:** Every originator follows own format for documentation and administration have lack of standardization is another obstacle in growth of securitization.

(v) **Inadequate Debt Market:** Lack of existence of a well-developed debt market in India is another obstacle that hinders the growth of secondary market of securitized or asset backed securities.

(vi) **Ineffective Foreclosure laws:** For last many years there are efforts are going on for effective foreclosure but still foreclosure laws are not supportive to lending institutions and this makes securitized instruments especially mortgaged backed securities less attractive as lenders face difficulty in transfer of property in event of default by the borrower.

6. **(a) (i) Calculation of Business Value**

<table>
<thead>
<tr>
<th></th>
<th>(Rs. Lakhs)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Profit before tax</td>
<td>110</td>
</tr>
<tr>
<td>( \frac{77}{1 - 0.30} )</td>
<td></td>
</tr>
<tr>
<td>Less: Extraordinary income</td>
<td>(8)</td>
</tr>
<tr>
<td>Add: Extraordinary losses</td>
<td>10</td>
</tr>
<tr>
<td>Profit from new product</td>
<td>112</td>
</tr>
<tr>
<td>Sales</td>
<td>70</td>
</tr>
<tr>
<td>Less: Material costs</td>
<td>20</td>
</tr>
<tr>
<td>Labour costs</td>
<td>12</td>
</tr>
<tr>
<td>Fixed costs</td>
<td>10 (42)</td>
</tr>
<tr>
<td></td>
<td>28</td>
</tr>
<tr>
<td>Less: Taxes @30%</td>
<td></td>
</tr>
<tr>
<td></td>
<td>140.00</td>
</tr>
<tr>
<td>Future Maintainable Profit after taxes</td>
<td>42.00</td>
</tr>
<tr>
<td>Relevant Capitalisation Factor</td>
<td>98.00</td>
</tr>
<tr>
<td>Value of Business (Rs.98/0.14)</td>
<td>700</td>
</tr>
</tbody>
</table>
(ii) Calculation of Market Price of Equity Share

<table>
<thead>
<tr>
<th>Description</th>
<th>Amount (Rs.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Future maintainable profits (After Tax)</td>
<td>98,00,000</td>
</tr>
<tr>
<td>Less: Preference share dividends 1,00,000 shares of Rs. 100 @ 13%</td>
<td>13,00,000</td>
</tr>
<tr>
<td>Earnings available for Equity Shareholders</td>
<td>85,00,000</td>
</tr>
<tr>
<td>No. of Equity Shares</td>
<td>50,00,000</td>
</tr>
<tr>
<td>Earning per share = ( \frac{85,00,000}{50,00,000} )</td>
<td>1.70</td>
</tr>
<tr>
<td>PE ratio</td>
<td>10</td>
</tr>
<tr>
<td>Market price per share</td>
<td>17</td>
</tr>
</tbody>
</table>

(b) (i) Calculation of Intrinsic value of Bond

PV of Interest + PV of Maturity Value of Bond

Forward rate of interests
1st Year 12%
2nd Year 11.25%
3rd Year 10.75%

PV of interest = \( \frac{90}{(1+0.12)} + \frac{90}{(1+0.12)(1+0.1125)} + \frac{90}{(1+0.12)(1+0.1125)(1+0.1075)} = 217.81 \)

PV of Maturity Value of Bond = \( \frac{1000}{(1+0.12)(1+0.1125)(1+0.1075)} = 724.67 \)

Intrinsic value of Bond = 217.81 + 724.67 = 942.48

(ii) Calculation of Expected Price in the bond market

Expected Price = Intrinsic Value x Beta Value
= 948.48 x 1.02 = 961.33

(c) (i) Forward contract: Dollar needed in 180 days = £3,00,000 x $ 1.96 = $5,88,000-

(ii) Money market hedge

Borrow $, convert to £, invest £, repay $ loan in 180 days
Amount in £ to be invested = 3,00,000/1.045 = £ 2,87,081
Amount of $ needed to convert into £ = 2,87,081 x 2 = $ 5,74,162
Interest and principal on $ loan after 180 days = $5,74,162 x 1.055 = $ 6,05,741

(iii) Call option:

<table>
<thead>
<tr>
<th>Expected Spot rate in 180 days</th>
<th>Prem./unit</th>
<th>Exercise Option</th>
<th>Total price per unit</th>
<th>Total price for £3,00,000x_i</th>
<th>Prob. Pi</th>
<th>pixi</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.91</td>
<td>0.04</td>
<td>No</td>
<td>1.95</td>
<td>5,85,000</td>
<td>0.25</td>
<td>1,46,250</td>
</tr>
<tr>
<td>1.95</td>
<td>0.04</td>
<td>No</td>
<td>1.99</td>
<td>5,97,000</td>
<td>0.60</td>
<td>3,58,200</td>
</tr>
<tr>
<td>2.05</td>
<td>0.04</td>
<td>Yes</td>
<td>2.01*</td>
<td>6,03,000</td>
<td>0.15</td>
<td>90,450</td>
</tr>
</tbody>
</table>

Add: Interest on Premium @ 5.5% (12,000 x 5.5%) = 660

5,95,560

* ($1.97 + $0.04)
(iv) No hedge option:

<table>
<thead>
<tr>
<th>Expected Future spot rate</th>
<th>Dollar needed Xi</th>
<th>Prob. Pi</th>
<th>Pi xi</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.91</td>
<td>5,73,000</td>
<td>0.25</td>
<td>1,43,250</td>
</tr>
<tr>
<td>1.95</td>
<td>5,85,000</td>
<td>0.60</td>
<td>3,51,000</td>
</tr>
<tr>
<td>2.05</td>
<td>6,15,000</td>
<td>0.15</td>
<td>92,250</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>5,86,500</td>
</tr>
</tbody>
</table>

Recommendation: No hedging strategy i.e. keeping the position open appears to be most preferable because least number of $ are needed under this option to arrange £3,00,000.