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**SUGGESTED SOLUTION**

**CA FINAL NOV'19**

**SUBJECT- S.F.M.**

**Test Code – FNJ 7292**

**BRANCH - () (Date :)**

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**ANSWER 1(A).**

(i) Variance of Returns

$$\text{Cor}_{ij} = \frac{\text{Cov}(i, j)}{\sigma_i \sigma_j}$$

Accordingly, for MFX

$$1 = \frac{\text{Cov}(X, X)}{\sigma_X \sigma_X}$$

$$\sigma_X^2 = 4.800$$

Accordingly, for MFY

$$1 = \frac{\text{Cov}(Y, Y)}{\sigma_Y \sigma_Y}$$

$$\sigma_Y^2 = 4.250$$

Accordingly, for Market Return

$$1 = \frac{\text{Cov}(M, M)}{\sigma_M \sigma_M}$$

$$\sigma_M^2 = 3.100$$

**(3 MARKS)**

(ii) Portfolio return, beta, variance and standard deviation

$$\text{Weight of MFX in portfolio} = \frac{1,20,000}{2,00,000} = 0.60$$

$$\text{Weight of MFY in portfolio} = \frac{80,000}{2,00,000} = 0.40$$

Accordingly Portfolio Return

$$0.60 \times 15\% + 0.40 \times 14\% = 14.60\%$$

Beta of each Fund

$$\beta = \frac{\text{Cov}(\text{Fund, Market})}{\text{Variance of Market}}$$

$$\beta_X = \frac{3.370}{3.100} = 1.087$$

$$\beta_Y = \frac{2.800}{3.100} = 0.903$$

Portfolio Beta

$$0.60 \times 1.087 + 0.40 \times 0.903 = 1.013$$

Portfolio Variance

$$\begin{aligned} \sigma_{XY}^2 &= w_X^2 \sigma_X^2 + w_Y^2 \sigma_Y^2 + 2 w_X w_Y \text{Cov}_{XY} \\ &= (0.60)^2 (4.800) + (0.40)^2 (4.250) + 2(0.60)(0.40)(4.300) \\ &= 4.472 \end{aligned}$$

Or Portfolio Standard Deviation

$$\sigma_{XY} = \sqrt{4.472} = 2.115$$

**(3 MARKS)**

(iii) Expected Return, Systematic and Unsystematic Risk of Portfolio

$$\text{Portfolio Return} = 10\% + 1.0134(12\% - 10\%) = 12.03\%$$

$$\text{MF X Return} = 10\% + 1.087(12\% - 10\%) = 12.17\%$$

$$\text{MF Y Return} = 10\% + 0.903(12\% - 10\%) = 11.81\%$$

$$\text{Systematic Risk} = \beta^2 \sigma^2$$

Accordingly,

$$\text{Systematic Risk of MFX} = (1.087)^2 \times 3.10 = 3.663$$

$$\text{Systematic Risk of MFY} = (0.903)^2 \times 3.10 = 2.528$$

$$\text{Systematic Risk of Portfolio} = (1.013)^2 \times 3.10 = 3.181$$

$$\text{Unsystematic Risk} = \text{Total Risk} - \text{Systematic Risk}$$

Accordingly,

$$\text{Unsystematic Risk of MFX} = 4.80 - 3.663 = 1.137$$

$$\text{Unsystematic Risk of MFY} = 4.250 - 2.528 = 1.722$$

$$\text{Unsystematic Risk of Portfolio} = 4.472 - 3.181 = 1.291$$

(3 MARKS)

(iv) Sharpe and Treynor Ratios and Alpha

*Sharpe Ratio*

$$\text{MFX} = \frac{15\% - 10\%}{\sqrt{4.800}} = 2.282$$

$$\text{MFY} = \frac{14\% - 10\%}{\sqrt{4.250}} = 1.94$$

$$\text{Portfolio} = \frac{14.6\% - 10\%}{2.115} = 2.175$$

*Treynor Ratio*

$$\text{MFX} = \frac{15\% - 10\%}{1.087} = 4.60$$

$$\text{MFY} = \frac{14\% - 10\%}{0.903} = 4.43$$

$$\text{Portfolio} = \frac{14.6\% - 10\%}{1.0134} = 4.54$$

*Alpha*

$$\text{MFX} = 15\% - 12.17\% = 2.83\%$$

$$\text{MFY} = 14\% - 11.81\% = 2.19\%$$

$$\text{Portfolio} = 14.6\% - 12.03\% = 2.57\%$$

(3 MARKS)

**ANSWER 1(B).**

(i) **Equilibrium price of Equity using CAPM**

$$= 5\% + 1.5(11\% - 5\%)$$

$$= 5\% + 9\% = 14\%$$

$$P = \frac{D_1}{k_e - g} = \frac{2.00(1.08)}{0.14 - 0.08} = \frac{2.16}{0.06} = ₹ 36$$

(ii) New Equilibrium price of Equity using CAPM (assuming 3% on 5% is inflation increase)

$$\begin{aligned} &= 5.15\% + 1.3(11\% - 5.15\%) \\ &= 5.15\% + 7.61\% = 12.76\% \end{aligned}$$

$$P = \frac{D_1}{k_e - g} = \frac{2.00(1.05)}{0.1276 - 0.05} = ₹ 27.06$$

Alternatively, it can also be computed as follows, assuming it is 3% in addition to 5%

$$\begin{aligned} &= 8\% + 1.3(11\% - 8\%) \\ &= 8\% + 3.9\% = 11.9\% \end{aligned}$$

$$P = \frac{D_1}{k_e - g} = \frac{2.00(1.05)}{0.119 - 0.05} = ₹ 30.43$$

(4 marks)

Alternatively, if all the factors are taken separately then solution of this part will be as follows:

(i) **Inflation Premium increase by 3%.**

This raises  $R_x$  to 17%. Hence, new equilibrium price will be:

$$= \frac{2.00(1.08)}{0.17 - 0.08} = ₹ 24$$

(ii) **Expected Growth rate decrease by 3%.**

Hence, revised growth rate stand at 5%:

$$= \frac{2.00(1.05)}{0.14 - 0.05} = ₹ 23.33$$

(iii) **Beta decreases to 1.3.**

Hence, revised cost of equity shall be:

$$\begin{aligned} &= 5\% + 1.3(11\% - 5\%) \\ &= 5\% + 7.8\% = 12.8\% \end{aligned}$$

As a result New Equilibrium price shall be:

$$P = \frac{D_1}{k_e - g} = \frac{2.00(1.08)}{0.128 - 0.08} = ₹ 45$$

(4 MARKS)

**ANSWER 1(C).**

Angel investors invest in small startups or entrepreneurs. Often, angel investors are entrepreneur's family and friends. The capital angel investors provide may be a one-time investment to help the business propel or an ongoing injection of money to support and carry the company through its difficult early stages.

Angel investors provide more favorable terms compared to other lenders, since they usually invest in the entrepreneur starting the business rather than the viability of the business. Angel

investors are focused on helping startups take their first steps, rather than the possible profit they may get from the business. Essentially, angel investors are the opposite of venture capitalists.

Angel investors are also called informal investors, angel funders, private investors, seed investors or business angels. These are affluent individuals who inject capital for startups in exchange for ownership equity or convertible debt. Some angel investors invest through crowd funding platforms online or build angel investor networks to pool in capital.

Angel investors typically use their own money, unlike venture capitalists who take care of pooled money from many other investors and place them in a strategically managed fund.

Though angel investors usually represent individuals, the entity that actually provides the fund may be a limited liability company, a business, a trust or an investment fund, among many other kinds of vehicles.

Angel investors who seed startups that fail during their early stages lose their investments completely. This is why professional angel investors look for opportunities for a defined exit strategy, acquisitions or initial public offerings (IPOs).

**(4 MARKS)**

**ANSWER 2(A).**

Receipts using a forward contract =  $\$10,000,000/0.016129 =$  Rs. 620,001,240

**Receipts using currency futures**

The number of contracts needed is  $(\$10,000,000/0.016118)/24,816,975 = 25$

Initial margin payable is 25 contracts x Rs. 22,500 = Rs.

5,62,500 On April

1,2015 Close at 0.016134

Receipts =  $US\$10,000,000/0.016136 =$  Rs. 619,732,276

Variation Margin =

$[(0.016134 - 0.016118) \times 25 \times 24,816,975/-]/0.016136$

OR  $(0.000016 \times 25 \times 24,816,975)/.016136 = 9926.79/0.016136 =$  Rs. 615,195

Less: Interest Cost – Rs.  $5,62,500 \times 0.07 \times 3/12 =$  Rs. 9,844

Net Receipts Rs. 620,337,627

**Receipts under different methods of hedging**

Forward contract Rs. 620,001,240

Futures Rs. 620,337,627

No hedge (US\$ 10,000,000/0.016136) Rs. 619,732,276

The most advantageous option would have been to hedge with futures.

**(6 MARKS)**

**ANSWER 2(B).**

<i>Projected Balance Sheet</i>				
	Year 1	Year 2	Year 3	Year 4
Fixed Assets (40% of Sales)	9,600	11,520	13,824	13,824
Current Assets (20% of Sales)	4,800	5,760	6,912	6,912
Total Assets	14,400	17,280	20,736	20,736
Equity	14,400	17,280	20,736	20,736

**(2 MARKS)**

**Projected Cash Flows:-**

	Year 1	Year 2	Year 3	Year 4
Sales	24,000	28,800	34,560	34,560
PBT (10% of sale)	2,400	2,880	3,456	3,456
PAT (70%)	1,680	2,016	2,419.20	2,419.20
Depreciation	800	960	1,152	1,382
Addition to Fixed Assets	2,400	2,880	3,456	1,382
Increase in Current Assets	800	960	1,152	-
Operating cash flow (FCFF)	(720)	(864)	(1,036.80)	2,419.20

(3 MARKS)

**Projected Cash Flows:-**

Present value of Projected Cash Flows:-

Cash Flows	PVF at 15%	PV
-720	0.870	-626.40
-864	0.756	-653.18
-1,036.80	0.658	<u>-682.21</u>
		-1,961.79

(1 MARK)

Residual Value -  $2419.20/0.15 = 16,128$

Present value of Residual value =  $16128/(1.15)^3$

=  $16128/1.521 = 10603.55$

Total shareholders' value =  $10,603.55 - 1,961.79 = 8,641.76$

Pre strategy value =  $1,400 / 0.15 = 9,333.33$

Value of strategy =  $8,641.76 - 9,333.33 = -691.57$

Conclusion: The strategy is not financially viable

(2 MARKS)

**ANSWER 2(C).**

Every startup needs access to capital, whether for funding product development, acquiring machinery and inventory, or paying salaries to its employee. Most entrepreneurs think first of bank loans as the primary source of money, only to find out that banks are really the least likely benefactors for startups. So, innovative measures include maximizing non-bank financing.

Here are some of the sources for funding a startup:

- (i) **Personal financing.** It may not seem to be innovative but you may be surprised to note that most budding entrepreneurs never thought of saving any money to start a business. This is important because most of the investors will not put money into a deal if they see that you have not contributed any money from your personal sources.
- (ii) **Personal credit lines.** One qualifies for personal credit line based on one's personal credit efforts. Credit cards are a good example of this. However, banks are very cautious while granting personal credit lines. They provide this facility only when the business has enough cash flow to repay the line of credit.

- (iii) **Family and friends.** These are the people who generally believe in you, without even thinking that your idea works or not. However, the loan obligations to friends and relatives should always be in writing as a promissory note or otherwise.
- (iv) **Peer-to-peer lending.** In this process group of people come together and lend money to each other. Peer to peer to lending has been there for many years. Many small and ethnic business groups having similar faith or interest generally support each other in their start up endeavors.
- (v) **Crowd funding.** Crowd funding is the use of small amounts of capital from a large number of individuals to finance a new business initiative. Crowd funding makes use of the easy accessibility of vast networks of people through social media and crowd funding websites to bring investors and entrepreneurs together.
- (vi) **Microloans.** Microloans are small loans that are given by individuals at a lower interest to a new business ventures. These loans can be issued by a single individual or aggregated across a number of individuals who each contribute a portion of the total amount.
- (vii) **Vendor financing.** Vendor financing is the form of financing in which a company lends money to one of its customers so that he can buy products from the company itself. Vendor financing also takes place when many manufacturers and distributors are convinced to defer payment until the goods are sold. This means extending the payment terms to a longer period for e.g. 30 days payment period can be extended to 45 days or 60 days. However, this depends on one's credit worthiness and payment of more money.
- (viii) **Purchase order financing.** The most common scaling problem faced by startups is the inability to find a large new order. The reason is that they don't have the necessary cash to produce and deliver the product. Purchase order financing companies often advance the required funds directly to the supplier. This allows the transaction to complete and profit to flow up to the new business.
- (ix) **Factoring accounts receivables.** In this method, a facility is given to the seller who has sold the good on credit to fund his receivables till the amount is fully received. So, when the goods are sold on credit, and the credit period (i.e. the date upto which payment shall be made) is for example 6 months, factor will pay most of the sold amount upfront and rest of the amount later. Therefore, in this way, a startup can meet his day to day expenses.

**(6 MARKS)**

**ANSWER 3(A).**

- (i) Swap Points for 2 months and 15 days

	Bid	Ask
Swap Points for 2 months (a)	70	90
Swap Points for 3 months (b)	160	186
Swap Points for 30 days (c) = (b) – (a)	90	96
Swap Points for 15 days (d) = (c)/2	45	48
Swap Points for 2 months & 15 days (e) = (a) + (d)	115	138

**(3 MARKS)**

(ii) Foreign Exchange Rates for 20<sup>th</sup> June 2016

	Bid	Ask
Spot Rate (a)	66.2525	67.5945
Swap Points for 2 months & 15 days (b)	0.0115	0.0138
	66.2640	67.6083

(1 MARK)

(iii) Annual Rate of Premium

	Bid	Ask
Spot Rate (a)	66.2525	67.5945
Foreign Exchange Rates for 20 <sup>th</sup> June 2016 (b)	66.2640	67.6083
Premium (c)	0.0115	0.0138
Total (d) = (a) + (b)	132.5165	135.2028
Average (d) / 2	66.2583	67.6014
Premium	$0.0115 \times \frac{12}{66.2583 \times 2.5} \times 100$ = 0.0833%	$0.0138 \times \frac{12}{67.6014 \times 2.5} \times 100$ = 0.0980%

(4 MARKS)

**ANSWER 3(B).**

(i) Calculation of Market price:

$$TM = \frac{\text{Coupon interest} + \left( \frac{\text{Discount or premium}}{\text{Years left}} \right)}{\frac{\text{Face Value} + \text{Market value}}{2}}$$

Discount or premium – YTM is more than coupon rate, market price is less than Face Value i.e. at discount.

Let x be the market price

$$0.15 = \frac{110 + \left\{ \frac{(1,000 - x)}{6} \right\}}{\frac{1,000 + x}{2}}$$

$$x = \text{Rs. } 834.48$$

Alternatively, it can also be calculated using Tabular Method.

(2 marks)

(ii) Duration

Year	Cash flow	P.V. @ 15%		Proportion of bond value	Proportion of bond value x time (years)
1	110	.870	95.70	0.113	0.113
2	110	.756	83.16	0.098	0.196
3	110	.658	72.38	0.085	0.255
4	110	.572	62.92	0.074	0.296



5	110	.497	54.67	0.064	0.320
6	1110	.432	479.52	0.565	3.39
			848.35	1.000	4.570

Duration of the Bond is 4.570 years

(2 marks)

(iii) **Volatility**

$$\text{Volatility of the bond} = \frac{\text{Duration}}{(1 + \text{yields})} = \frac{4.570}{1.15} = 3.974$$

(1 mark)

(iv). The expected market price if increase in required yield is by 100 basis points.

$$= \text{Rs. } 834.48 \times 1.00 (3.974/100) = \text{Rs. } 33.162$$

Hence expected market price is Rs. 834.48 – Rs. 33.162 = Rs.

801.318 Alternatively, this can also be calculated as follows:

$$\text{Rs. } 848.35 \times 100 (3.974/100) = 33.71$$

Hence, expected market price is 848.35 – 33.71 =

814.64 Thus, the market price will decrease.

(1.5 marks)

(v). The expected market price if decrease in required yield is by 75 basis points.

$$= \text{Rs. } 834.48 \times 0.75 (3.974/100) = \text{Rs. } 24.87$$

Hence expected market price is Rs. 834.48 + Rs. 24.87 = Rs.

859.35 Alternatively, this can also be calculated as follows:

$$848.35 \times 0.75 (3.974/100) = 25.29$$

Hence, expected market price = 848.35 – 25.29 = Rs.

823.06 Thus, the market price will increase.

(1.5 marks)

**ANSWER 3(C).**

The steps involved in securitization mechanism are as follows:

**Creation of Pool of Assets:** The process of securitization begins with creation of pool of assets by segregation of assets backed by similar type of mortgages in terms of interest rate, risk, maturity and concentration units.

**Transfer to SPV:** One assets have been pooled, they are transferred to Special Purpose Vehicle (SPV) especially created for this purpose.

**Sale of Securitized Papers:** SPV designs the instruments based on nature of interest, risk, tenure etc. based on pool of assets. These instruments can be Pass Through Security or Pay Through Certificates.

**Administration of assets:** The administration of assets in subcontracted back to originator which collects principal and interest from underlying assets and transfer it to SPV, which works as a conduct.

**Recourse to Originator:** Performance of securitized papers depends on the

performance of underlying assets and unless specified in case of default they go back to originator from SPV.

**Repayment of funds:** SPV will repay the funds in form of interest and principal that arises from the assets pooled.

**Credit Rating of Instruments:** Sometime before the sale of securitized instruments credit rating can be done to assess the risk of the issuer.

(4 marks)

**ANSWER 4(A).**

(i) Taxable income = Net Income / (1 - 0.40)

or, Taxable income = Rs. 15,00,000 / (1 - 0.40) = Rs.

25,00,000 Again, taxable income = EBIT - Interest

or, EBIT = Taxable Income + Interest

= Rs. 25,00,000 + Rs. 15,00,000 = Rs. 40,00,000

(3 marks)

(ii) EVA = EBIT (1 - T) - (WACC × Invested capital)

= Rs. 40,00,000 (1 - 0.40) - (0.126 × Rs. 1,00,00,000)

= Rs. 24,00,000 - Rs. 12,60,000 = Rs. 11,40,000

(2 marks)

(iii) EVA Dividend = Rs. 11,40,000 / 2,50,000 = Rs. 4.56

If Delta Ltd. does not pay a dividend, we would expect the value of the firm to increase because it will achieve higher growth, hence a higher level of EBIT. If EBIT is higher, then all else equal, the value of the firm will increase.

(2 marks)

**ANSWER 4(B).**

(i) Return of a US Investor

$$= \frac{\text{Ending Price} - \text{Initial Price}}{\text{Initial Price}} \times 100$$

$$= \frac{1919 - 2028}{2028} \times 100 = -5.37\%$$

(1 MARK)

(ii) Return of Mr. X

Initial Investment (Rs.)	1.58 Crore
Applicable Exchange Rate on 1.1.20x1	Rs. 62.25
Equivalent US\$	US\$ 2,53,815.26
Purchase Price of Standard & Poor Index	2028
No. of Standard & Poor Indices Purchased	125.16
Ending Price of Standard & Poor Index	1919
Proceeds realised in US\$ on sale of Standard & Poor Index	US\$ 2,40,182.04
Applicable Exchange Rate on 1.1.20x2	Rs. 67.25
Proceeds realised in INR on sale of Standard & Poor Index	Rs. 1,61,52,242
Rate of Return ( $\frac{16152242 - 15800000}{15800000} \times 100$ )	2.23%

(4 MARKS)

(iii) Rate of Return had the amount been invested in India

Initial Investment (Rs.)	1.58 Crore
Purchase Price of Indian Index	7395
No. of Indian Indices Purchased	2136.58
Let Ending Price of Indian Index	X
Then to be indifferent with return in International Market	$\frac{2136.58 \times X - 1.58}{1.58} \times 100 = 2.23$
Price of Indian Index to be indifferent	7559.90 say 7560

(3 MARKS)

**ANSWER 4(C).**

**Embedded Derivatives:** A derivative is defined as a contract that has all the following characteristics:

- Its value changes in response to a specified underlying, e.g. an exchange rate, interest rate or share price;
- It requires little or no initial net investment;
- It is settled at a future date;
- The most common derivatives are currency forwards, futures, options, interest rate swaps etc.

An embedded derivative is a derivative instrument that is embedded in another contract - the host contract. The host contract might be a debt or equity instrument, a lease, an insurance contract or a sale or purchase contract.

Derivatives require to be marked-to-market through the income statement, other than qualifying hedging instruments. This requirement on embedded derivatives are designed to ensure that mark-to-market through the income statement cannot be avoided by including - embedding - a derivative in another contract or financial instrument that is not marked-to market through the income statement.

An embedded derivative can arise from deliberate financial engineering and intentional shifting of certain risks between parties. Many embedded derivatives, however, arise inadvertently through market practices and common contracting arrangements. Even purchase and sale contracts that qualify for executory contract treatment may contain

embedded derivatives. An embedded derivative causes modification to a contract's cash flow, based on changes in a specified variable.

(5 MARKS)

OR

**ANSWER 4(C).**

A '**Reverse Stock Split**' is a process whereby a company decreases the number of shares outstanding by combining current shares into fewer or lesser number of shares. For example, in a 5 : 1 reverse split, a company would take back 5 shares and will replace them with one share.

Although, reverse stock split does not result in change in Market value or Market Capitalization of the company but it results in increase in price per share.

Considering above mentioned ratio, if company has 100 million shares outstanding having Market Capitalisation of Rs. 500 crore before split up, the number of shares would be equal to 20 million after the reverse split up and market price per share shall increase from Rs. 50 to Rs.250.

**Reasons for Reverse Split Up**

Although Reverse Split up is not so popular especially in India but company carries out reverse split up due to following reasons:

- (i) Avoiding delisting from stock exchange: Sometimes as per the stock exchange regulations if the price of shares of a company goes below a certain limit it can be delisted. To avoid such delisting company may resort to reverse stock split up.
- (ii) Avoiding removal from constituents of Index: If company's share is one of the constituents of the market index then to avoid their removal of scrip from this list due to persistent fall in the prices of share, the company may take reverse split up route.
- (iii) To avoid the tag of "Penny Stock": If the price of shares of a company goes below a limit it may be called "Penny Stock". In order to improve the image of the company and avoiding this stage, the company may go for Reverse Stock Split.
- (iv) To attract Institutional Investors and Mutual Funds: It might be possible that institutional investors may be shying away from acquiring low value shares and hence to attract these investors the company may adopt the route of Reverse Stock Split up to increase the price per share.

(5 MARKS)

**ANSWER 5(A).**

- (i) Under the given circumstances, the USD is expected to quote at a premium in India as the interest rate is higher in India.

(1 MARK)

(ii) Calculation of the forward rate:

$$\frac{1+R_h}{1+R_f} = \frac{F_1}{E_0}$$

Where:  $R_h$  is home currency interest rate,  $R_f$  is foreign currency interest rate,  $F_1$  is end of the period forward rate, and  $E_0$  is the spot rate.

$$\text{Therefore } \frac{1+(0.09/2)}{1+(0.02/2)} = \frac{1 + (0.09/2)}{1 + (0.02/2)} = \frac{F_1}{64.50}$$

$$\frac{1 + 0.045}{1 + 0.01} = \frac{F_1}{64.50}$$

$$\text{or } \frac{1.045}{1.01} \times 64.50 = F_1$$

$$\text{or } \frac{67.4025}{1.01} = F_1$$

$$\text{or } F_1 = \text{Rs.}66.74$$

(3 marks)

(iii) Rate of premium:

$$\frac{66.74 - 64.50}{64.50} \times \frac{12}{6} \times 100 = 6.94\%$$

(1 MARK)

ANSWER 5(B).

P.V. of dividend stream and sales proceeds

Year	Divd. /Sale	PVF (12%)	PV (Rs.)
1	Rs. 20/-	0.893	17.86
2	Rs. 20/-	0.797	15.94
3	Rs. 20/-	0.712	14.24
4	Rs. 24/-	0.636	15.26
5	Rs. 24/	0.567	13.61
6	Rs. 24/	0.507	12.17
7	Rs. 24/	0.452	10.85
7	Rs. 1026/- (Rs. 900 x 1.2 x 0.95)	0.452	<u>463.75</u>
			Rs. 563.68
	Less : Cost of Share (Rs. 500 x 1.05)		<u>Rs. 525.00</u>
	Net gain		<u>Rs. 38.68</u>

Since Mr. A is gaining Rs. 38.68 per share, he should buy the share.

Maximum price Mr. A should be ready to pay is Rs. 563.68 which will include incidental expenses.

So the maximum price should be Rs. 563.68 x 100/105 = Rs. 536.84

(6 MARKS)

ANSWER 5(C).

In this case, DM is at a premium against the Can\$.

Premium = [(0.671 - 0.666) / 0.666] x (12/3) x 100 = 3.00 per cent

Interest rate differential = 9.5% - 7.5% = 2 per cent.

Since the interest rate differential is smaller than the premium, it will be profitable to place money in Deutschmarks the currency whose 3-months interest is lower.

The following operations are carried out:

- (i) Borrow Can\$ 1000 at 9.5 per cent for 3- months;
- (ii) Change this sum into DM at the spot rate to obtain DM  
 $= (1000/0.666) = 1501.50$
- (iii) Place DM 1501.50 in the money market for 3 months to obtain a sum of
- |                                     |                    |
|-------------------------------------|--------------------|
| DM Principal:                       | 1501.50            |
| Add: Interest @ 7.5% for 3 months = | <u>28.15</u> Total |
|                                     | <u>1529.65</u>     |
- (iv) Sell DM at 3-months forward to obtain Can\$=  $(1529.65 \times 0.671) = 1026.40$
- (v) Refund the debt taken in Can\$ with the interest due on it, i.e.,

	Can\$
Principal	1000.00
Add: Interest @ 9.5% for 3 months	<u>23.75</u>
Total	<u>1023.75</u>

Net arbitrage gain =  $1026.40 - 1023.75 = \text{Can\$ } 2.65$

**Note:** The students may use any quantity of currency to arrive at the arbitrage gain since no specific amount is mentioned in the question.

**ANSWER 6(A).**

**As per TK Ltd.'s Offer**

	Rs. in lakhs
<b>(i) Net Consideration Payable</b>	
7 times EBIDAT, i.e. 7 x Rs. 230 lakh	1610
Less: Debt	<u>480</u>
	<u>1130</u>
<b>(ii) No. of shares to be issued by TK Ltd</b>	
Rs. 1130 lakh/Rs. 220 (rounded off) (Nos.)	5,13,600
<b>(iii) EPS of TK Ltd after acquisition</b>	
Total EBIDT (Rs. 800 lakh + Rs. 230 lakh)	1030.00
Less: Interest (Rs. 116 lakh + Rs. 60 lakh)	<u>176.00</u>
	854.00
Less: 30% Tax	<u>256.20</u>
Total earnings (NPAT)	<u>597.80</u>
Total No. of shares outstanding (24 lakh + 5,13,600)	29,13,600
EPS (Rs. 597.80 lakh/ 29,13,600)	Rs. 20.52

**(iv) Expected Market Price:**

	Rs. in lakhs
Pre-acquisition P/E multiple: EBIDAT	800.00
Less: Interest $1160 \times \frac{10}{100}$	116.00
	684.00
Less: 30% Tax	<u>205.20</u>
	<u>478.80</u>
No. of shares (lakhs)	24
EPS	Rs. 19.95
Hence, PE multiple (220/19.95)	11.03
Expected market price after acquisition (Rs. 20.52 x 11.03)	Rs. 226.34

**(2 MARKS)****As per SK Ltd.'s Offer**

	Rs. in lakhs
<b>(i) Net consideration payable</b> 12 lakhs shares x Rs. 110	1320
<b>(ii) No. of shares to be issued by TK Ltd</b> Rs. 1320 lakhs ÷ Rs. 220	6 lakh
<b>(iii) EPS of T Ltd after Acquisition</b> NPAT (as per earlier calculations)	597.80
Total no. of shares outstanding (24 lakhs + 6 lakhs)	30 lakh
Earning Per Share (EPS) Rs. 597.8/30 lakh	Rs. 19.93
<b>(iv) Expected Market Price (Rs. 19.93 x 11)</b>	219.23

**(iv) Advantages of Acquisition to TKLtd.**

Since the two companies are in the same industry, the following advantages could accrue:

- Synergy, cost reduction and operating efficiency.
- Better market share.
- Avoidance of competition

**(6 MARKS)**

**ANSWER 6(B).**

The bank would sell US \$ to its customer at the agreed rate under the contract. However, it would recover loss from the customer for early delivery.

On 19<sup>th</sup> February bank would buy US\$ 7000 from market and shall sell to customer. Further, Bank would enter into one month forward contract to sell the US \$ acquired under the cover deal.

(i) Swap Difference

Bank sells at	Rs. 46.3550
Bank buys at	Rs. 46.5800
Swap loss per US \$	<u>0.225</u>
Swap loss for US \$ 7000	<u>Rs. 1,575</u>

(ii) Interest on Outlay of Funds

On 19 <sup>th</sup> February, Bank sell to customer	Rs. 46.67
It buys from spot Market	<u>Rs. 46.58</u>
Inflow of funds per US \$	<u>Rs. 0.09</u>
Inflow of funds for US \$ 7000 is Rs. 630	
Interest on Rs. 630 at 12% for one month Rs. 6.30	

**(8 MARKS)**