SUGGESTED SOLUTION

CA FINAL

SUBJECT- S.F.M.

Test Code – FNJ 7410

BRANCH - () (Date :)

ANSWER 1(A).

(i) Variance of Returns

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

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

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

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

Accordingly Portfolio Return

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

Beta of each Fund

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

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

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

Portfolio Beta

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

Portfolio Variance

$$\sigma_{XY}^2 = w_X^2 \sigma_X^2 + w_Y^2 \sigma_Y^2 + 2 w_X w_Y \text{Cov}_{XY}$$

$= (0.60)^2 (4.800) + (0.40)^2 (4.250) + 2(0.60)(0.40)(4.300)$

$= 4.472$

Or Portfolio Standard Deviation

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

(3 MARKS)

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

Portfolio Return = 10% + 1.0134(12% - 10%) = 12.03%

MF X Return = 10% + 1.087(12% - 10%) = 12.17%

MF Y Return = 10% + 0.903(12% - 10%) = 11.81%

Systematic Risk = $\beta^2 \sigma^2$

Accordingly,

Systematic Risk of MFX = $(1.087)^2$ x 3.10 = 3.663

Systematic Risk of MFY = $(0.903)^2$ x 3.10 = 2.528

Systematic Risk of Portfolio = $(1.013)^2$ x 3.10 = 3.181

Unsystematic Risk = Total Risk – Systematic Risk

Accordingly,

Unsystematic Risk of MFX = 4.80 – 3.663 = 1.137

UnSystematic Risk of MFY = 4.250 – 2.528 = 1.722

UnSystematic Risk of Portfolio = 4.472 – 3.181 = 1.291

(3 MARKS)

(iv) Sharpe and Treynor Ratios and Alpha

Sharpe Ratio

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

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

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

Treynor Ratio

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

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

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

Alpha

MFX = 15% - 12.17% = 2.83%

MFY = 14% - 11.81% = 2.19%

Portfolio = 14.6% - 12.03% = 2.57%

(3 MARKS)

ANSWER 1(B).

Market Risk Premium (A) = 14% – 7% = 7%

Share	Beta	Risk Premium (Beta x A) %	Risk Free Return %	Return %	Return Rs.
Oxy Rin Ltd.	0.45	3.15	7	10.15	8,120
Boxed Ltd.	0.35	2.45	7	9.45	14,175
Square Ltd.	1.15	8.05	7	15.05	33,863
Ellipse Ltd.	1.85	12.95	7	19.95	89,775
Total Return					1,45,933

Total Investment Rs. 9,05,000

(i) Portfolio Return $= (\text{Rs. } 145933 / \text{Rs. } 905000) \times 100 = 16.13\%$

(ii) Portfolio Beta **=** Portfolio Return = Risk Free Rate + Risk Premium x β = 16.13%

$$7\% + 7\beta = 16.13\%$$

$$\beta = 1.30$$

Alternative Approach

First, we shall compute Portfolio Beta using the weighted average method as follows:

$$\text{Beta}_P = 0.45 \times \frac{0.80}{9.05} + 0.35 \times \frac{1.50}{9.05} + 1.15 \times \frac{2.25}{9.05} + 1.85 \times \frac{4.50}{9.05}$$

$= 0.45 \times 0.0884 + 0.35 \times 0.1657 + 1.15 \times 0.2486 + 1.85 \times 0.4972 = 0.0398 + 0.058 + 0.2859 + 0.9198 = 1.3035$

Accordingly,

(i) Portfolio Return using CAPM formula will be as follows:

$R_P = R_F + \text{Beta}_P(R_M - R_F)$

$= 7\% + 1.3035(14\% - 7\%) = 7\% + 1.3035(7\%)$

$= 7\% + 9.1245\% = 16.1245\%$

(ii) Portfolio Beta

As calculated above 1.3035

(iii)

Cluster based approach to lending is intended to provide a full-service approach to cater to the diverse needs of the MSE sector which may be achieved through extending banking services to recognized MSE clusters. A cluster based approach may be more beneficial (a) in dealing with well-defined and recognized groups (b) availability of appropriate information for risk assessment

(c) monitoring by the lending institutions and (d) reduction in costs. The banks have, therefore, been advised to treat it as a thrust area and increasingly adopt the same for SME financing. United Nations Industrial Development Organisation (UNIDO) has identified 388 clusters spread over 21 states in various parts of the country. The Ministry of Micro, Small and Medium Enterprises has also approved a list of clusters under the Scheme of Fund for Regeneration of Traditional Industries (SFURTI) and Micro and Small Enterprises Cluster Development Programme (MSE-CDP) located in 121 Minority Concentration Districts. Accordingly, banks have been advised to take appropriate measures to improve the credit flow to the identified clusters. Banks have also been advised that they should open more MSE focused branch offices at different MSE clusters which can also act as counseling. Centres for MSEs. Each lead bank of the district may adopt at least one cluster.

(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 (1,00,000/.0.02127)	= Rs. 47,01,457
Receipts using currency futures	
The number of contracts needed is (1,00,000 / 0.02118)/4, 72,000 = 10	
Initial margin payable is 10 × Rs. 15,000 = Rs. 1,50,000	
On September 1 Close at 0.02134	= 46,88,233
Receipts = US$ 1,00,000/ 0.02133	= 46,88,233
Variation Margin = [(0.02134 − 0.02118) × 10 × 472000/-]/0.02133	
OR (0.00016 × 10 × 472000)/ 0.02133 = 755.2/0.02133	35,406
	47,23,639
Less : Interest Cost – 1,50,000 × 0.08 × 3/12	Rs. 3,000
Net Receipts	Rs. 47,20,639
Receipts under different methods of hedging	
Forward contract	Rs. 47,01,457
Futures	Rs. 47,20,639
No hedge	
US$ 1,00,000/ 0.02133	Rs. 46,88,233
The most advantageous option would have been to hedge with futures.	

(6 MARKS)

ANSWER 2(B).

Projected Balance Sheet				
	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 20th 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 20th 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	$\frac{0.0115}{66.2583} \times \frac{12}{2.5} \times 100$	$\frac{0.0138}{67.6014} \times \frac{12}{2.5} \times 100$
	= 0.0833%	= 0.0980%

(4 MARKS)

ANSWER 3(B).

(i) Current yield $= \dfrac{Rs.7}{Rs.90} \times \dfrac{12}{6} = 0.1555$ or 15.55%

YTM can be determined from the following equation

$7 \times$ PVIFA (YTM, 10) $+ 100 \times$ PVIF (YTM, 10) $= 90$

Let us discount the cash flows using two discount rates 7.50% and 9% as follows:

Year	Cash Flows	PVF@7.50%	PV@7.50%	PVF@9%	PV@9%
0	-90	1	-90	1	-90
1	7	0.930	6.51	0.917	6.419
2	7	0.865	6.055	0.842	5.894
3	7	0.805	5.635	0.772	5.404
4	7	0.749	5.243	0.708	4.956
5	7	0.697	4.879	0.650	4.550
6	7	0.648	4.536	0.596	4.172
7	7	0.603	4.221	0.547	3.829
8	7	0.561	3.927	0.502	3.514
9	7	0.522	3.654	0.460	3.220
10	107	0.485	51.90	0.422	45.154
			6.560		**-2.888**

Now we use interpolation formula

$$7.50\% + \frac{6.560}{6.560 - (-2.888)} \times 1.50\%$$

$$7.50\% + \frac{6.560}{9.448} \times 1.50\% = 7.50\% + 1.041\%$$

YTM = 8.541% say 8.54%

Note: Students can also compute the YTM using rates other than 15% and 18%.

(ii)   The duration can be calculated as follows:

Year	Cash Flow	PVF@ 8.54%	PV @ 8.54%	Proportion of NCD value	Proportion of NCD value × time
1	7	0.921	6.447	0.0717	0.0717
2	7	0.849	5.943	0.0661	0.1322
3	7	0.782	5.474	0.0608	0.1824
4	7	0.721	5.047	0.0561	0.2244
5	7	0.664	4.648	0.0517	0.2585
6	7	0.612	4.284	0.0476	0.2856
7	7	0.563	3.941	0.0438	0.3066
8	7	0.519	3.633	0.0404	0.3232
9	7	0.478	3.346	0.0372	0.3348
10	107	0.441	47.187	0.5246	5.2460
			89.95		**7.3654**

Duration = 7.3654 half years i.e. 3.683 years.

(iii)   Realized Yield can be calculated as follows:

$$\frac{(7 \times 10) + 100}{(1+R)^{10}} = 90$$

$$(1+R)^{10} = \frac{170}{90}$$

$$R = \left(\frac{170}{90}\right)^{1/10} - 1 = 0.06380 \text{ or } 6.380\% \text{ for half yearly and } 12.76\% \text{ annually.}$$

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).

Financial Analysis whether to set up the manufacturing units in India or not may be carried using NPV technique as follows:

I. Incremental Cash Outflows

	$ Million
Cost of Plant and Machinery	500.00
Working Capital	50.00
Release of existing Working Capital	(15.00)
	535.00

II. Incremental Cash Inflow after Tax (CFAT)

(a) Generated by investment in India for 5 years

	$ Million
Sales Revenue (5 Million x $80)	400.00
Less: Costs	
Variable Cost (5 Million x $20)	100.00
Fixed Cost	30.00
Depreciation ($500Million/5)	100.00
EBIT	170.00
Taxes@35%	59.50

EAT	110.50
Add: Depreciation	100.00
CFAT (1-5 years)	210.50
Cash flow at the end of the 5 years (Release of Working Capital)	35.00

(b) Cash generation by exports

	$ Million
Sales Revenue (1.5 Million x $80)	120.00
Less: Variable Cost (1.5 Million x $40)	60.00
Contribution before tax	60.00
Tax@35%	21.00
CFAT (1-5 years)	39.00

(C) Additional CFAT attributable to Foreign Investment

	$ Million
Through setting up subsidiary in India	210.50
Through Exports in India	39.00
CFAT (1-5 years)	171.50

III. Determination of NPV

Year	CFAT ($ Million)	PVF@12 %	PV($ Million)
1-5	171.50	3.6048	618.2232
5	35	0.5674	19.8590
			638.0822
Less: Initial Outflow			535.0000
			103.0822

Since NPV is positive the proposal should be accepted.

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.

<div align="right">(5 MARKS)</div>

<div align="center">OR</div>

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.

<div align="right">(5 MARKS)</div>

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:

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

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_o is the spot rate.

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

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

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

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

or $F_1 = $ 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	463.75
			Rs. 563.68
	Less : Cost of Share (Rs. 500 x 1.05)		Rs. 525.00
	Net gain		Rs. 38.68

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 =   28.15 Total

1529.65

(iv)   Sell DM at 3-months forward to obtain Can$= (1529.65x0.671) = 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	23.75
Total	1023.75

Net arbitrage gain = 1026.40 – 1023.75 = 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**).**

(i)   **Market value of Companies before Merger**

Particulars	RIL	SIL
EPS	Rs. 2	Re. 1
P/E Ratio	10	5
Market Price per Share	Rs. 20	Rs. 5
Equity shares	10,00,000	10,00,000
Total Market Value	2,00,00,000	50,00,000

(2 MARKS)

(ii)   **Post Merger Effects on RIL**

	Rs.
Post merger earnings	30,00,000
Exchange Ratio (1 : 4)	
No. of equity shares o/s (10,00,000 + 2,50,000)	12,50,000
EPS : 30,00,000/ 12,50,000	2.4
PE Ratio	10
Market Value 10 × 2.4	24

Total Value (12,50,000 × 24)	3,00,00,000
Gains From Merger :	**Rs.**
Post – Merger Market Value of the Firm	3,00,00,000
Less : Pre – Merger Market Value	
RIL 2,00,00,000	
SIL 50,00,000	2,50,00,000
Total gains from Merger	50,00,000

(4 MARKS)

Apportionment of Gains between the Shareholders :

Particulars	RIL(Rs.)	SIL (Rs.)
Post Merger Market Value :		
10,00,000 × 24	2,40,00,000	--
2,50,000 × 24	-	60,00,000
Less : Pre – Merger Market Value	2,00,00,000	50,00,000
Gains from Merger :	40,00,000	10,00,000

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

(3 MARKS)

(iii)

Post – Merger Earnings :	
Increase in Earnings by 20%	
New Earnings : Rs. 30,00,000 × (1 + 0.20)	Rs. 36,00,000
No. of equity shares outstanding	12,50,000
EPS (Rs. 36,00,000/12,50,000)	Rs. 2.88
PE Ratio	10
Market Price Per Share : = Rs. 2.88 × 10	Rs. 28.80

∴ Share holders will be better – off than before the merger situation.

(3 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 19th 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 $	0.225
Swap loss for US $ 7000	Rs. 1,575

(ii) Interest on Outlay of Funds

On 19th February, Bank sell to customer	Rs. 46.67
It buys from spot Market	Rs. 46.58

		Rs. 0.09
Inflow of funds per US $		

Inflow of funds for US $ 7000 is Rs. 630

Interest on Rs. 630 at 12% for one month Rs. 6.30

SUGGESTED TO ADDITIONAL QUESTIONS

AQ 1)

Calculation of Income available for Distribution

	Units (Lakh)	Per Unit (Rs.)	Total (Rs. In lakh)
Income from April	300	0.0765	22.9500
Add: Dividend equalization collected on issue	6	0.0765	0.4590
	306	0.0765	23.4090
Add: Income from May		0.1125	34.4250
	306	0.1890	57.8340
Less: Dividend equalization paid on repurchase	3	0.1890	(0.5670)
Add: Income from June	303	0.1890	57.2670
		0.1500	45.4500
	303	0.3390	102.7170
Less: Dividend Paid		0.2373	(71.9019)
	303	0.1017	30.8151

Calculation of Issue Price at the end of April

	Rs.
Opening NAV	18.750
Add: Entry Load 2% of Rs. 18.750	(0.375)
	19.125
Add: Dividend Equalization paid on Issue Price	0.0765
	19.2015

Calculation of Repurchase Price at the end of May

	Rs.
Opening NAV	18.750
Less: Exit Load 2% of Rs. 18.750	(0.375)
	18.375
Add: Dividend Equalization paid on Issue Price	0.1890
	18.564

Closing NAV

		Rs. (Lakh)
Opening Net Asset Value (Rs. 18.75×300)		5625.0000
Portfolio Value Appreciation		425.4700
Issue of Fresh Units (6×19.2015)		115.2090
Income Received ($22.950 + 34.425 + 45.450$)		102.8250
		6268.504
Less: Units repurchased (3×18.564)	-55.692	

		-71.9019	(-127.5939)
Income Distributed			
Closing Net Asset Value			6140.9101
Closing Units (300 + 6 − 3) lakh			303 lakh
Closing NAV as on 30th June			Rs. 20.2670

AQ 2)

Date	Closing Sensex	Sign of Price Charge
1.10.17	2800	
3.10.17	2780	-
4.10.17	2795	+
5.10.17	2830	+
8.10.17	2760	-
9.10.17	2790	+
10.10.17	2880	+
11.10.17	2960	+
12.10.17	2990	+
15.10.17	3200	+
16.10.17	3300	+
17.10.17	3450	+
19.10.17	3360	-
22.10.17	3290	-
23.10.17	3360	+
24.10.17	3340	-
25.10.17	3290	-
29.10.17	3240	-
30.10.17	3140	-
31.10.17	3260	+

Total of sign of price changes (r) = 8 No

of Positive changes = n_1 = 11

No. of Negative changes = n_2 = 8

$$\mu_r = \frac{2n_1 n_2}{n_1 + n_2} + 1$$

$$\mu = \frac{2 \times 11 \times 8}{11 + 8} + 1 = 176/19 + 1 = 10.26$$

$$\hat{\sigma}_r = \sqrt{\frac{2n_1 n_2 (2n_1 n_2 - n_1 - n_2)}{(n_1 + n_2)^2 (n_1 + n_2 - 1)}}$$

$$\hat{\sigma}_r = \sqrt{\frac{(2 \times 11 \times 8)(2 \times 11 \times 8 - 11 - 8)}{(11 + 8)^2 (11 + 8 - 1)}} = \sqrt{\frac{176 \times 157}{(19)^2 (18)}} = \sqrt{4.252} = 2.06$$

Since too few runs in the case would indicate that the movement of prices is not random. We employ a two- tailed test the randomness of prices.

Test at 5% level of significance at 18 degrees of freedom using t - table

The lower limit

$$= \mu - t \times \hat{\sigma}_r = 10.26 - 2.101 \times 2.06 = 5.932$$

Upper limit

$$= \mu + t \times \hat{\sigma}_r = 10.26 + 2.101 \times 2.06 = 14.588$$

At 10% level of significance at 18 degrees of freedom

Lower limit

$$= 10.26 - 1.734 \times 2.06 = 6.688$$

Upper limit

$$= 10.26 + 1.734 \times 2.06 = 13.832$$

As seen r lies between these limits. Hence, the market exhibits weak form of efficiency .

*For a sample of size n, the t distribution will have n-1 degrees of freedom.

AQ 3)

No MSME unit can take off without monetary support. This need for fiancé can be classified into following types :

- Long and medium term loans
- Short term or working capital requirements
- Risk Capital
- Seed Capital/ Marginal Money
- Bridge loans

Financial assistance in India for MSME units is available from a variety of institutions. The important ones are :

(i)   Commercial/ Regional Rural / Co – operative Banks.

(ii)   SFCs/ SIDCs : State Financial Corporations (e.g. Delhi Financial Corporation) State Industrial Development Corporations.

Long and medium term loans are provided by SFCs, SIDBI and SIDCs. Banks also finance term loans. This type of financing is needed to fund purchase of land, construction of factory building/ shed and for purchase of machinery and equipment. The short – term loans are required for working capital requirements, which fund the purchase of raw materials and consumables, payment of wages and other immediate manufacturing and administrative expenses. Such loans are generally available from commercial banks. The commercial banks also sanction composite loan comprising of working capital and term loan up to a long limit to Rs. 1 crore.

For loans from financial institutions and commercial banks a formal application needs to be made. The details of documentation that need to be provided with the loan application are indicated below :

- Balance Sheet and Profit Loss Statement for last three consecutive years of firms owned by promoters
- Income Tax Assessment Certificates of Partners / Directors
- Proof of Possession of Land / Building
- Architect's estimate for construction cost
- Partnership deed/ Memorandum and Articles of Associations of Company
- Project Report
- Budgetary Quotations of Plant and Machinery

A sanction or rejection letter is issued by bank after its assessment of the application. After receiving a sanction letter, applicants need to indicate in writing their acceptance of terms and conditions laid down by FI/ Banks.

Subsequently, loan is disbursed according to the phased implementation of the project. In today's environment there are other choices apart from commercial banks and Government owned financial institutions. These options include venture capital funds and non – government finance companies.