



Strategic Financial Management

RTP - NOV 2019 ATTEMPT

OLD SCHEME OF EDUCATION



Prof. CA Ankit Sarvaiya



Prof. CA Ankit Sarvaiya

CA Ankit Sarvaiya



OUR HALL OF FAME RANKER'S SPEAK

"I can just say Thank You sir. SFM has a long story for me, and you were a beautiful part of it. Scored 79 in SFM - that's the Climax!!!"

**CA HIMANSHU JAIN [AIR 31 -
MAY 2019 (NEW)]
SFM SCORE: 79/100**



The Institute of Chartered Accountants of India
Examination Results, May 2019

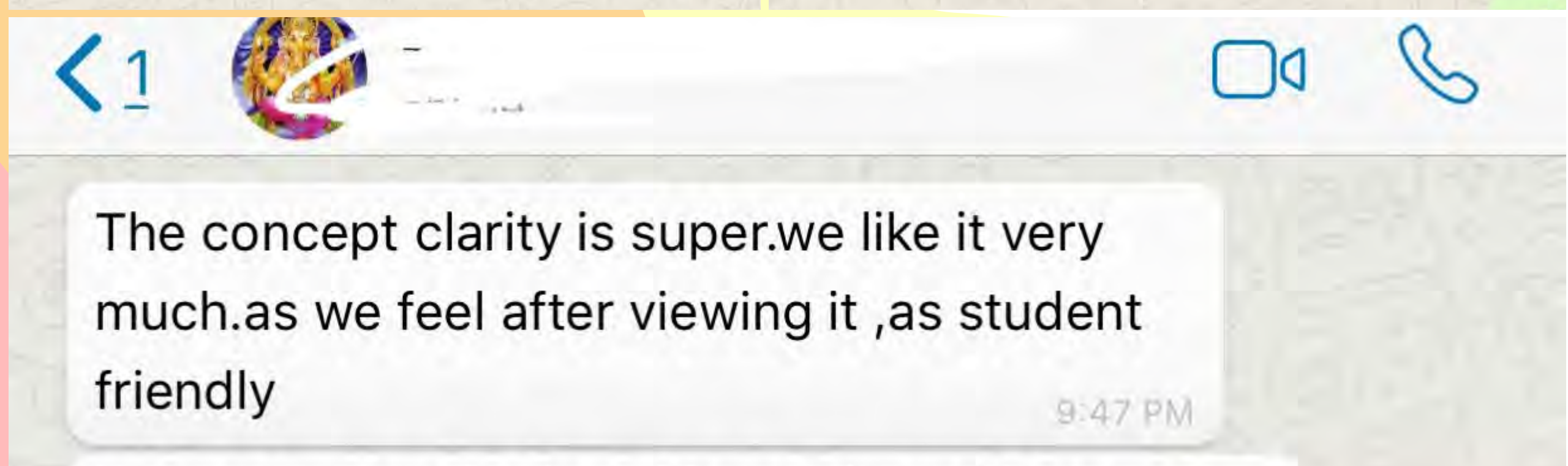
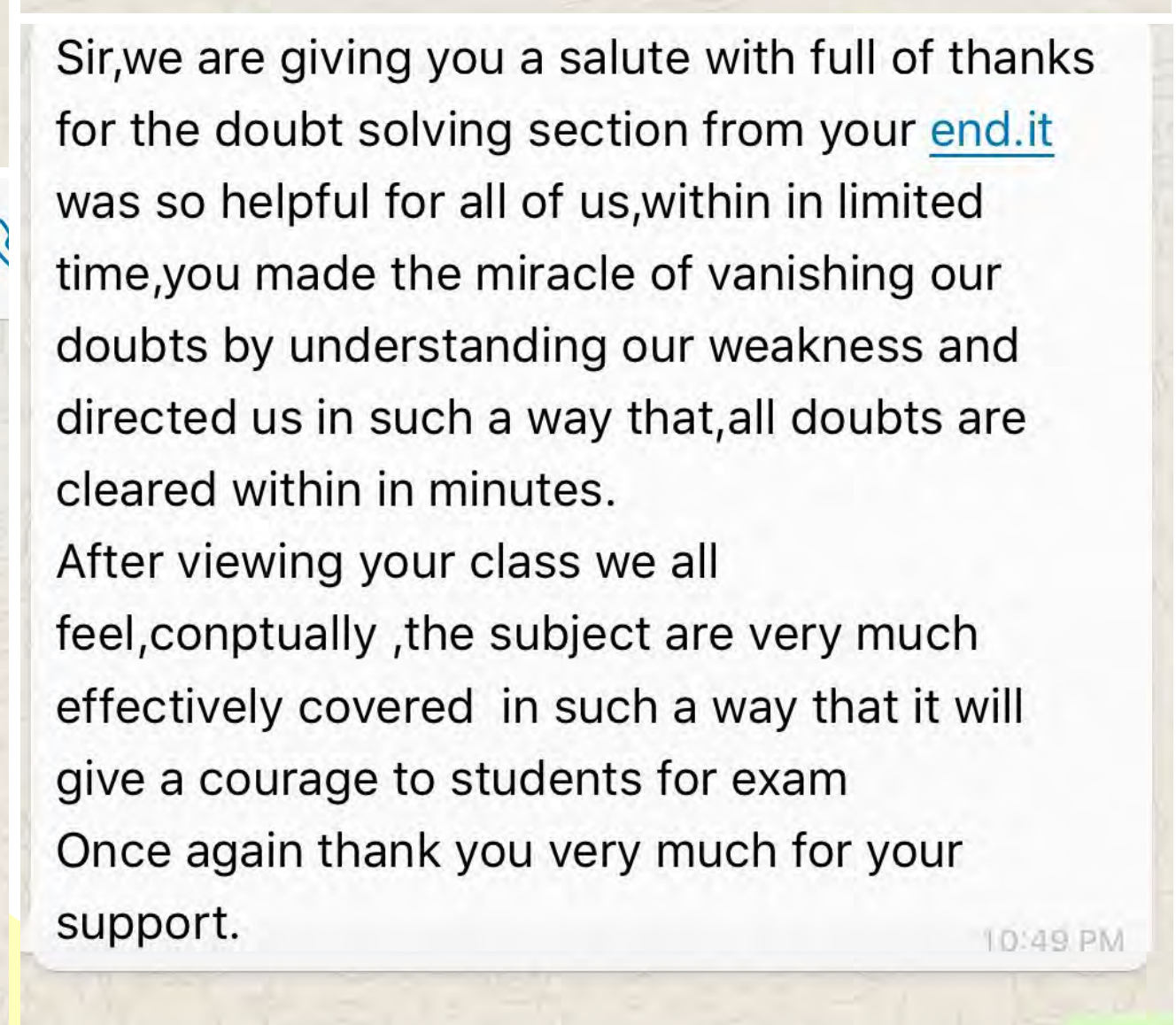
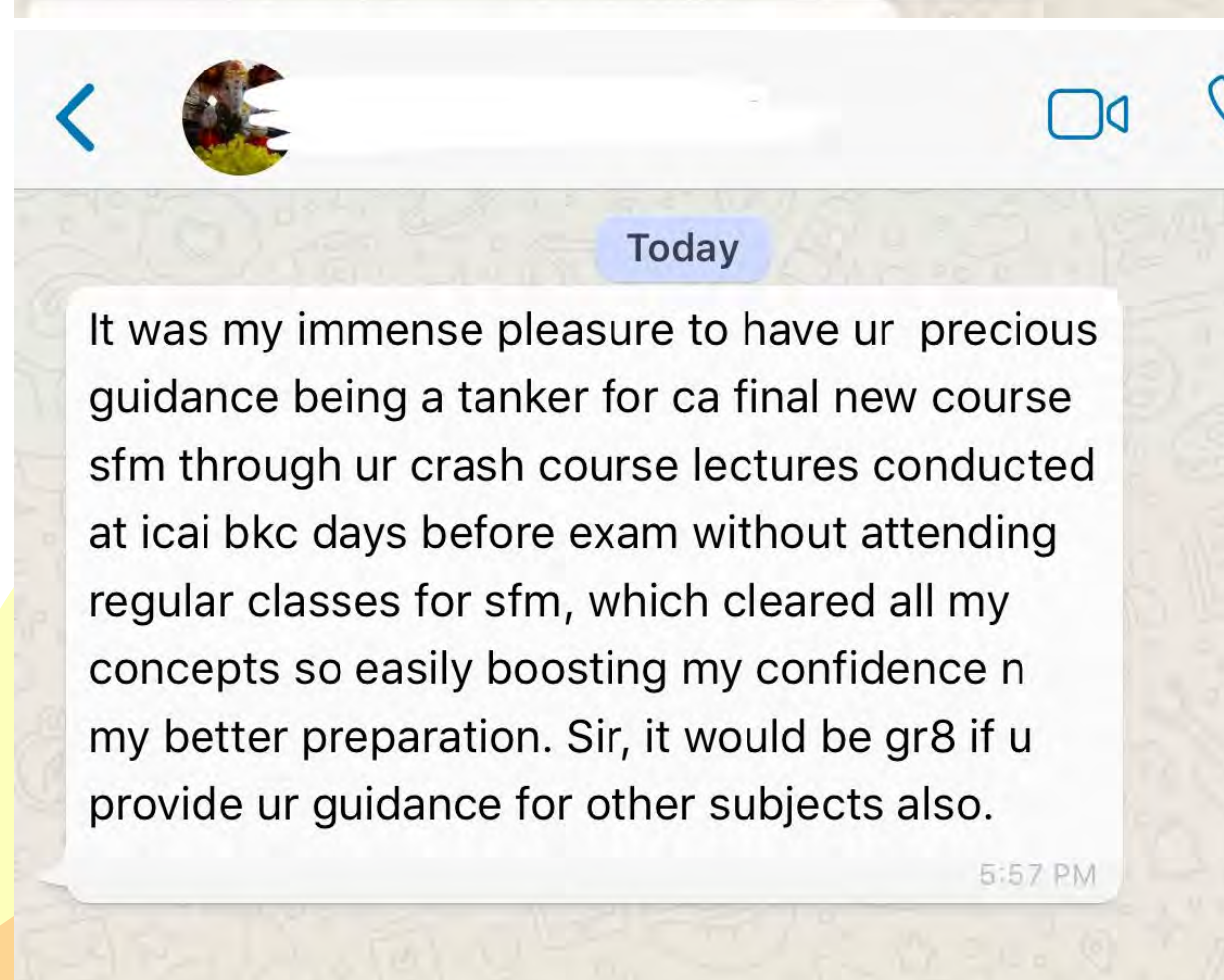
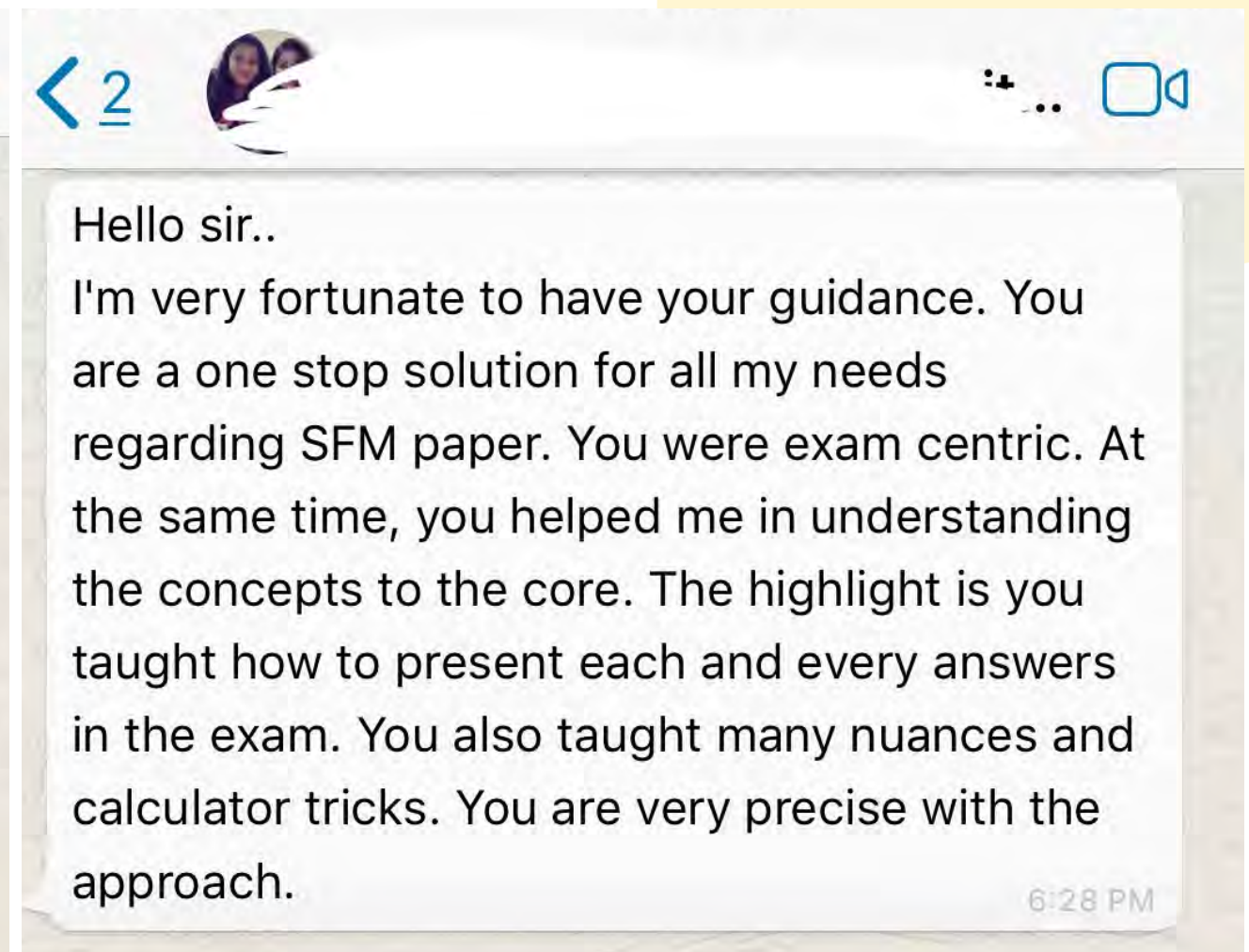
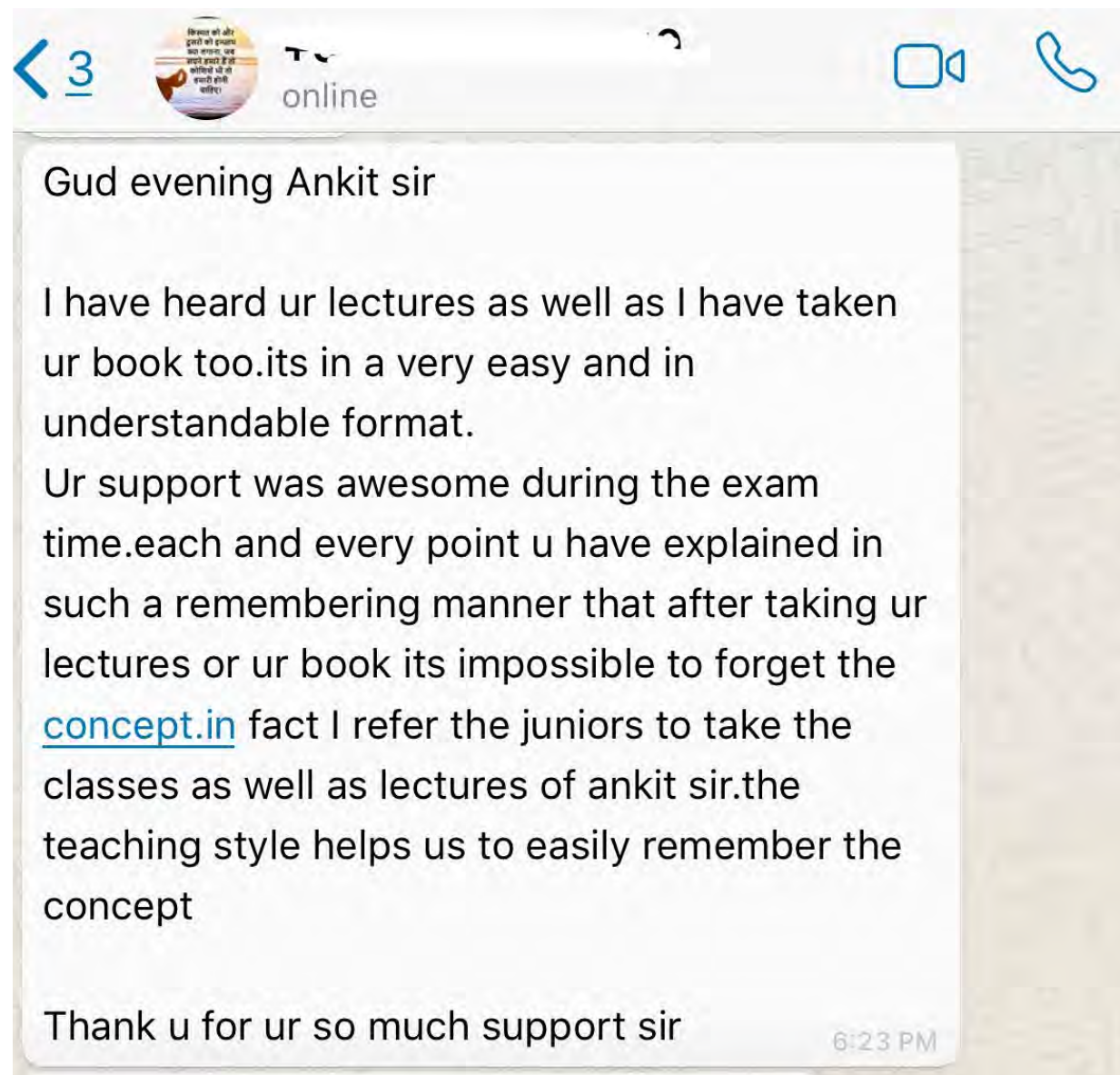
Final New Examination - Merit List, May [Logout](#)
2019

(Top candidates upto 50 Ranks securing minimum
of 55 percent and above marks)

Roll Number	207984
Name	HIMANSHU JAIN
Reg No	NRO0366230
Total marks	538
Rank No	31

#LearnFromRankers #BecomeARanker

OUR #GENNEXT SPEAKS!!!



YOU COULD BE NEXT!!!



CA Final - SFM - RTP - November 2019 Attempt
Old Scheme of Education

- CA Ankit Sarvaiya

DISCLAIMER

The solutions presented hereunder are merely the solutions based on the method by which the Author's Students have solved similar questions in his regular/crash/fast-track batch and are solely based on the interpretation of the questions by the Author [CA Ankit Sarvaiya]. Suggested Answers provided by ICAI may be different, based on interpretational differences between the Author and ICAI. The Author does not assume any responsibility for the suggested answers provided by him.



Project Planning & Capital Budgeting

Question 1:

[Project Planning and Capital Budgeting]

Shivam Ltd. is considering two mutually exclusive projects A and B. Project A costs ₹ 36,000 and project B ₹ 30,000. You have been given below the net present value probability distribution for each project.

Project A		Project B	
NPV Estimates (₹)	Probability	NPV Estimates (₹)	Probability
15,000	0.20	15,000	0.10
12,000	0.30	12,000	0.40
6,000	0.30	6,000	0.40
3,000	0.20	3,000	0.10

You are required to:

- 1) Compute the expected net present values of projects A and B.
- 2) Compute the risk attached to each project i.e. standard deviation of each probability distribution.
- 3) Compute the profitability index of each project.
- 4) Which project do you recommend? State with reasons.

Solution:

- 1) **Computation of the expected net present values of projects A and B.**

Project A			Project B		
NPV Estimates (₹)	Probability	Probable NPV (₹)	NPV Estimates (₹)	Probability	Probable NPV (₹)
15,000	0.20	3,000	15,000	0.10	1,500
12,000	0.30	3,600	12,000	0.40	4,800
6,000	0.30	1,800	6,000	0.40	2,400
3,000	0.20	600	3,000	0.10	300
Probable NPV (\bar{x})		9,000	Probable NPV (\bar{x})		9,000

- 2) **Computation of the risk attached to each project i.e. standard deviation of each probability distribution.**

Project A				Project B			
NPV (x)	(x - \bar{x})	Probability	p.(x - \bar{x}) ²	NPV(x)	(x - \bar{x})	Probability	p.(x - \bar{x}) ²
15,000	6,000	0.20	72,00,000	15,000	6,000	0.10	36,00,000
12,000	3,000	0.30	27,00,000	12,000	3,000	0.40	36,00,000
6,000	-3,000	0.30	27,00,000	6,000	-3,000	0.40	36,00,000
3,000	-6,000	0.20	72,00,000	3,000	-6,000	0.10	36,00,000
Variance			1,98,00,000	Variance			1,44,00,000
Thus, SD = $\sqrt{\text{Variance}}$			4,450	Thus, SD = $\sqrt{\text{Variance}}$			3,795

- 3) **Computation of the profitability index of each project.**

We are given the NPV estimates of Both the projects. We know that:

$$\text{NPV} = \text{PV (Inflows)} (-) \text{PV (Outflows)}$$

$$\text{Probable NPV} = \text{Probable PV (Inflows)} (-) \text{PV (Outflows)}$$



Thus,

- For Project A: ₹ 9,000 = Probable PV (Inflows) (-) ₹ 36,000
- For Project B: ₹ 9,000 = Probable PV (Inflows) (-) ₹ 30,000

Thus, Probable PV (Inflows) = ₹ 45,000

Thus, Probable PV (Inflows) = ₹ 39,000

Profitability Index = $\frac{PV \text{ (Inflows)}}{PV \text{ (Outflows)}}$

Thus, the Profitability Index

- For Project A = $\frac{₹ 45,000}{₹ 36,000}$ = 1.2500
- For Project B = $\frac{₹ 39,000}{₹ 30,000}$ = 1.3000

4) Recommendation

Measurement of risk is made by the possible variation of outcomes around the expected value and the decision will be taken in view of the variation in the expected value where two projects have the same expected value. Since in the given case, the SD of Project B < SD of Project A (where both projects have the same probable NPV), it is advisable to Invest in Project B, because the NPV is comparatively subject to Lower Risk.





Leasing Decisions

Question 2:**Leasing Decisions**

The Finance manager of ABC Corporation is analyzing firm's policy regarding computers which are now being taken on lease on yearly basis on rental of ₹ 1,00,000 per year. The computers can be bought for ₹ 5,00,000. The purchase would be financed by 16% and the loan is repayable in 4 equal annual installments.

On account of rapid technological progress in the computer industry, it is suggested that a 4-year economic life should be used instead of a 10-year physical life. It is estimated that the computers would be sold for ₹ 2,00,000 at the end of 4 years. The company uses the straight line method of depreciation. Corporate tax rate is 35%.

- 1) Whether the equipment be bought or be taken on lease?
- 2) Analyze the financial viability from the point of view of the lessor, assuming his cost of capital is 14%.
- 3) Determine the minimum lease rent at which lessor would break even.

Solution:**1) Evaluation of the Lease v/s Borrow Alternatives**

ABC Corporation has 2 alternatives:

1. To take the asset on Lease
2. To Borrow Funds and Buy the Asset

Alternative 1: Take the Asset on Lease

Lease Rentals = ₹ 1,00,000 per annum.

Since the question is silent w.r.t. payment of lease rentals either on the first day or the last day of the year, we have assumed that the Lease Rentals are paid on the last day of the year. Thus, the Post Tax Lease Rentals would be:

$$= \text{Lease Rentals (x) [1 (-) tax]} = ₹ 1,00,000 (x) [1 (-) 0.35] = ₹ 65,000 \text{ per annum}$$

$$\begin{aligned} \text{Cost of Leasing} &= \text{PV of Post Tax Lease Rentals} \\ &= ₹ 65,000 (x) \text{PVIFA (kd, 4 years)} \\ &= ₹ 65,000 (x) \text{PVIFA [(0.16 (x) \{1 - 0.35\}), 4 years]} \\ &= ₹ 65,000 (x) 3.1426 \\ &= ₹ 2,04,269.76 \end{aligned}$$

Alternative 2: Cost of Borrowing and Buying the Asset

$$\text{Amount of Installment} = \frac{\text{Total Principal}}{\text{PVIFA (r\%, n)}} = \frac{₹ 5,00,000}{\text{PVIFA (16\%, 4)}} = \frac{₹ 5,00,000}{2.7981} = ₹ 1,78,687.53 \text{ per annum}$$

Table indicating the breakup of Principal and Interest Component per year

Yr	Opening Principal o/s	Interest @ 16%	Principal Repaid	Closing Principal o/s	Installment Amount	ITS @ 35%
1	5,00,000.00	80,000.00	98,687.53	4,01,312.47	1,78,687.53	28,000.00
2	4,01,312.47	64,209.99	1,14,477.54	2,86,834.92	1,78,687.53	22,473.50
3	2,86,834.92	45,893.59	1,32,793.95	1,54,040.98	1,78,687.53	16,062.76
4	1,54,040.98	24,646.56	1,54,040.98	-	1,78,687.53	8,626.29

Calculation of Amount of Depreciation, WDV and PV of Post Tax Salvage Value

Depreciation	= $\frac{[₹ 5,00,000 (-) ₹ 2,00,000]}{4 \text{ years}}$	= ₹ 75,000 per annum
Thus, Depreciation Tax Shield per annum	= ₹ 75,000 (x) 35%	= 26,250 per annum
WDV at the end of 4 years	= Salvage Value (under SLM)	= ₹ 2,00,000
PV of Post Tax Salvage Value	= ₹ 2,00,000 (x) PVIF (10.40%, 4 th year)	= ₹ 1,34,633.68

Determination of Net Cost of Borrowing

Yr	Installment Amount	ITS @ 35%	DTS @ 35%	Net = Instalment - ITS - DTS	PVF @ 10.40%	PV of Net Instalment
1	1,78,687.53	28,000.00	26,250.00	1,24,437.53	0.9058	1,12,715.16
2	1,78,687.53	22,473.50	26,250.00	1,29,964.04	0.8205	1,06,631.38
3	1,78,687.53	16,062.76	26,250.00	1,36,374.78	0.7432	1,01,350.72
4	1,78,687.53	8,626.29	26,250.00	1,43,811.24	0.6732	96,809.18
						4,17,506.44
						(-) PV of Post Tax Salvage Value
						-1,34,633.68
						Net PV (Outflows) under this option
						2,82,872.77

2) Evaluation of the financial viability from Lessor's point of view

NPV = (-) Equipment Cost (+) PV of Post Tax Lease Rentals (+) PV of Depreciation Tax Shield (+) PV of Post tax Salvage Value

- Equipment Cost		= ₹ 5,00,000
- Lease Rentals		= ₹ 1,00,000 per annum.
- Post Tax Lease Rentals	= ₹ 1,00,000 p.a. (x) (1 - 0.35)	= ₹ 65,000 per annum
- PV of Post Tax Lease Rental	= ₹ 65,000 (x) PVIFA (14%, 4 years)	= ₹ 1,89,391.30
- Depreciation	= $\frac{[₹ 5,00,000 (-) ₹ 2,00,000]}{4 \text{ years}}$	= ₹ 75,000 per annum
- Depreciation Tax Shield per annum	= ₹ 75,000 (x) 35%	= 26,250 per annum
- PV of Depreciation Tax Shield per annum	= ₹ 26,250 (x) PVIFA (14%, 4 years)	= 76,484.95 per annum
- WDV at the end of 4 years	= Salvage Value (under SLM)	= ₹ 2,00,000
- PV of Post Tax Salvage Value	= ₹ 2,00,000 (x) PVIF (14%, 4 th year)	= ₹ 1,18,416.06

Thus, NPV = (-) ₹ 5,00,000 (+) ₹ 1,89,391.30 (+) 76,484.95 (+) ₹ 1,18,416.06 = (-) ₹ 1,15,707.70

Conclusion: Since the NPV is negative, the proposal is not financially viable for the lessor at 14% cost of capital.

3) Calculation of Break Even Lease Rentals

Let the lease rentals to be quoted for each year among the period of 4 years be "x".

Target Rate of Return	= 14%
- Equipment Cost	= ₹ 5,00,000



- Post Tax Lease Rentals = $\left[\frac{x}{(1.14)^1} (+) \frac{x}{(1.14)^2} (+) \frac{x}{(1.14)^3} (+) \frac{x}{(1.14)^4} \right] 65\%$
= $[0.8772x (+) 0.7695x (+) 0.6750x (+) 0.5921x] (x) 65\%$ = **1.8939x**
- Depreciation = $\frac{[\text{₹ } 5,00,000 (-) \text{₹ } 2,00,000]}{4 \text{ years}}$ = **₹ 75,000 per annum**
- Depreciation Tax Shield per annum = ₹ 75,000 (x) 35% = **₹ 26,250 per annum**
- PV of Depreciation Tax Shield per annum = ₹ 26,250 (x) PVIFA (14%, 4 years) = **₹ 76,484.95 per annum**
- WDV at the end of 4 years = Salvage Value (under SLM) = **₹ 2,00,000**
- PV of Post Tax Salvage Value = ₹ 2,00,000 (x) PVIF (14%, 4th year) = **₹ 1,18,416.06**

NPV (i.e. 0) = (-) ₹ 5,00,000 (+) 1.8939x (+) ₹ 76,484.95 (+) 1,18,416.06

Thus, x = ₹ 1,61,094.52 (i.e. Break-Even Lease Rentals at 14% Cost of Capital)





Dividend Decisions

Question 3:**Dividend Decisions**

RST Ltd. has a capital of ₹ 10,00,000 in equity shares of ₹ 100 each. The shares are currently quoted at par. The company proposes to declare a dividend of ₹ 10 per share at the end of the current financial year. The capitalization rate for the risk class of which the company belongs is 12%. What will be the market price of the share at the end of the year, if

- 1) a dividend is not declared?
- 2) a dividend is declared?
- 3) assuming that the company pays the dividend and has net profits of ₹ 5,00,000 and makes new investments of ₹ 10,00,000 during the period, how many new shares must be issued? Use the MM model.

Solution:

As per the MM Approach, $P_0 = \frac{D_1 + P_1}{1 + k_e}$

1. Determination of Market Price per share (P_1)

- When Dividend is Declared : $100 = \frac{10 + P_1}{1 + 0.12}$ **Thus, $P_1 = ₹ 102$**
- When Dividend is Not Declared : $100 = \frac{0 + P_1}{1 + 0.12}$ **Thus, $P_1 = ₹ 112$**

The difference in the share price will always be equal to the amount of dividend

2. Determination of No of Shares to be issued if company pays dividend

Particulars	₹
Net Profit	500,000
(-) Dividends [10,000 shares (x) ₹ 10 / share]	(100,000)
Profits available for reinvestment	400,000
Investment needed	1,000,000
Additional Funds required	600,000
Thus, no of shares to be issued @ ₹ 102 / share	5,883

Derivatives



Question 4:

Derivatives

Calculate the price of 3 months PQR futures, if PQR (FV ₹ 10) quotes ₹ 220 on NSE and the three months future price quotes at ₹ 230 and the one month borrowing rate is given as 15 percent and the expected annual dividend is 25 percent per annum payable before expiry. Also examine arbitrage opportunities

Solution:

$$\begin{aligned}\text{Future's Price (Theoretical)} &= \text{Spot} + \text{Net Cost of carry (Note 1)} \\ &= ₹ 220 (+) ₹ 5.75 \\ &= ₹ 225.75\end{aligned}$$

$$\text{Future's Price (Actual)} = ₹ 230.00$$

Since Actual F (₹ 230.00) > Theoretical F (₹ 225.75), we should go for **Cash and Carry Arbitrage**. Thus, the strategy would be **Long stock, short futures & borrow funds** (i.e. S +, F - & borrow funds)

Thus, Arbitrage Profit shall be:

- Proceeds received on shorting futures		= ₹ 230.00 (Inflow)
- Proceeds spent on Purchase of Stock		= ₹ 220.00 (Outflow)
- Interest Paid on Borrowed Funds	= ₹ 220.00 (x) 15% (x) ³ / ₁₂	= ₹ 8.25 (Outflow)
- Dividend Received	= ₹ 10.00 (x) 25%	= ₹ 2.50 (Inflow)
Thus, Net Profit from this arbitrage strategy		= ₹ 4.25

Alternatively,

After 3 months → Spot Price = Futures Price (i.e. S = F) {Based on the Principle of Convergence}

Whatever may be the price, the profit will be ₹ (230.00 (-) 225.75) = ₹ 4.25

Note 1: Calculation of Net Cost of Carry

Net Cost of Carry

= Interest Saved (+) Storage Cost Saved (-) Monetary Benefit foregone (e.g. Dividend) (-) Convenience Yield Foregone.

$$\text{Net Cost of Carry} = ₹ 8.25 (+) ₹ 0 (-) [₹ 10 \text{ per share } (x) 25\%] (-) ₹ 0 = ₹ 5.75$$

Note regarding Borrowing Rate:

BORROWING RATE which is given as 15 percent is assumed as the interest rate PER ANNUM (Interest Rates by default are assumed as PER ANNUM Rates). Accordingly, Interest is computed as ₹ 220 (x) 15% (x) ³/₁₂ = ₹ 8.25

Question 5:

Derivatives

The equity share of VCC Ltd. is quoted at ₹ 210. A 3-month call option is available at a premium of ₹ 6 per share and a 3-month put option is available at a premium of ₹ 5 per share. Ascertain the net payoffs to the option holder of a call option and a put option.

- the strike price in both cases in ₹ 220; and
- the share price on the exercise day is ₹ 200, 210, 220, 230, 240.



Also indicate the price range at which the call and the put options may be gainfully exercised.

Solution:

The two cases are as follows:

1 C + - Opening ₹ 220 @ ₹ 6

1 P + - Opening ₹ 220 @ ₹ 5

Thus, the Profit Profile would look as follows:

Price at Expiry	Bought a Call [C+]				Bought a Put [P+]			
	Ex / Lapse	Payoff	Premium	Net	Ex / Lapse	Payoff	Premium	Net
200	Lapse	-	-6.00	-6.00	Exercise	20.00	-5.00	15.00
210	Lapse	-	-6.00	-6.00	Exercise	10.00	-5.00	5.00
220	Lapse	-	-6.00	-5.00	Lapse	-	-5.00	-5.00
230	Exercise	10.00	-6.00	4.00	Lapse	-	-5.00	-5.00
240	Exercise	20.00	-5.00	14.00	Lapse	-	-5.00	-5.00

The call option can be exercised gainfully for any price above ₹ 226 (i.e. the Break Even Price = Strike Price (+) Premium = ₹ 220 + ₹ 6) and put option for any price below ₹ 215 (i.e. the Break Even Price = Strike Price (-) Premium = ₹ 220 - ₹ 5).

Question 6:

Derivatives

Electraspace is consumer electronics wholesaler. The business of the firm is highly seasonal in nature. In 6 months of a year, firm has a huge cash deposits and especially near Christmas time and other 6 months firm cash crunch, leading to borrowing of money to cover up its exposures for running the business. It is expected that firm shall borrow a sum of €50 million for the entire period of slack season in about 3 months.

A Bank has given the following quotations:

- Spot 5.50% - 5.75%
- 3 × 6 FRA 5.59% - 5.82%
- 3 × 9 FRA 5.64% - 5.94%

3 month € 50,000 future contract maturing in a period of 3 months is quoted at 94.15 (5.85%). You are required to determine:

- 1) How a FRA, shall be useful if the actual interest rate after 3 months turnout to be:
 - a) 4.5%
 - b) 6.5%
- 2) How 3 months Future contract shall be useful for company if interest rate turns out as mentioned in part (1) above.

Solution:

- 1) By entering into an FRA, firm shall effectively lock in interest rate for a specified future in the given it is 6 months. Since, the period of 6 months is starting in 3 months, the firm shall opt for 3 × 9 FRA locking borrowing rate at 5.94%. In the given scenarios, the net outcome shall be as follows:



Particulars	Rate turns out to be	
	4.50%	6.50%
FRA Rate	5.94%	5.94%
Actual Interest Rate	4.50%	6.50%
Loss/(Gain)	1.44%	(0.56%)
<u>FRA Payment/(Receipt)</u>		
- € 50 million (x) 1.44% (x) $\frac{6}{12}$	€ 3,60,000	-
- € 50 million (x) (0.56%) (x) $\frac{6}{12}$	-	(€ 1,40,000)
<u>Actual Interest Payment</u>		
- € 50 million (x) 4.50% (x) $\frac{6}{12}$	€ 11,25,000	-
- € 50 million (x) 6.50% (x) $\frac{6}{12}$	-	€ 16,25,000
Net Outflow = Actual Interest ± FRA Payment/(Receipt)	€ 14,85,000	€ 14,85,000

Thus, by entering into FRA, the firm has committed itself to a rate of 5.94% as follows:

$$\frac{€ 14,85,000}{€ 5,00,00,000} (x) 100 (x) \frac{12}{6}$$

= 5.94% p.a.

- 2) Since firm is a borrower it will like to off-set interest cost by profit on Future Contract. Accordingly, if interest rate rises it will gain hence it should sell interest rate futures.

Thus, No of Contracts = $\frac{\text{Amount of Borrowing}}{\text{Contract Size}} (x) \frac{\text{Duration of Loan}}{3 \text{ months}}$

$$= \frac{€ 5,00,00,000}{€ 50,000} (x) \frac{6 \text{ months}}{3 \text{ months}}$$

= 2,000 contracts

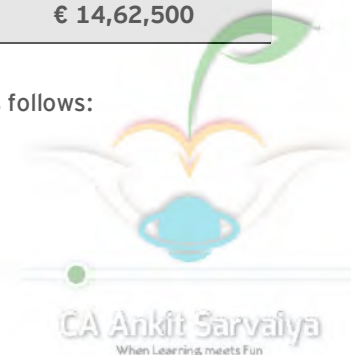
The final outcome in the given two scenarios shall be as follows:

Particulars	Rate turns out to be	
	4.50%	6.50%
<u>Future Course Action:</u>		
- Sell to Open	94.15	94.15
- Buy to Close [(100 - 4.50), (100 - 6.50)]	95.50	93.50
Loss/(Gain)	1.35%	(0.65%)
<u>Cash Payment (Receipt) for Future Settlement</u>		
- €50,000 (x) 2,000 (x) 1.35% (x) $\frac{3}{12}$	€ 3,37,500	-
- €50,000 (x) 2,000 (x) (0.65%) (x) $\frac{3}{12}$	-	(€ 1,62,500)
<u>Interest for 6 months on €50 million at actual rates</u>		
- € 50 million (x) 4.50% (x) $\frac{6}{12}$	€ 11,25,000	-
- € 50 million (x) 6.50% (x) $\frac{6}{12}$	-	€ 16,25,000
Net Outflow = Actual Interest ± Cash Payment/(Receipt)	€ 14,62,500	€ 14,62,500

Thus, by entering into Futures contracts, the firm has committed itself to a rate of 5.85% as follows:

$$\frac{€ 14,62,500}{€ 5,00,00,000} (x) 100 (x) \frac{12}{6}$$

= 5.94% p.a.





**Bond Analysis &
Valuations**

Question 7:**Bond Analysis and Valuations**

A hypothetical company ABC Ltd. issued a 10% Debenture (Face Value of ₹ 1000) of the duration of 10 years is currently trading at ₹ 850 per debenture. The bond is convertible into 50 equity shares being currently quoted at ₹ 17 per share. If yield on equivalent comparable bond is 11.80%, then calculate the spread of yield of the above bond from this comparable bond. The relevant present value table is as follows.

PV	t ₁	t ₂	t ₃	t ₄	t ₅	t ₆	t ₇	t ₈	t ₉	t ₁₀
PVIF _{0.11, t}	0.901	0.812	0.731	0.659	0.593	0.535	0.482	0.434	0.391	0.352
PVIF _{0.13, t}	0.885	0.783	0.693	0.613	0.543	0.480	0.425	0.376	0.333	0.295

Solution:

Conversion Price = ₹ 50/share x 17 shares/bond = ₹ 850/bond

Intrinsic Value of the Bond = ₹ 850 / bond

We know that IV of the Bond = PV of Coupons (+) PV of Redemption

NPV from the Bond = PV (Inflows) (-) PV (Outflows)

We need to calculate the rate at which the PV of Inflows (i.e. Coupons and Redemption) from the Bond = IV of the Bond.

Let us discount the cash flows by 11%

NPV = PV (Inflows) (-) PV (Outflows)

= ₹ 941.00 (-) ₹ 850.00

= ₹ 91.00

PV (Inflows) = [(1,000 (x) 10%) (x) PVIFA (11%, 10 years)] + {1,000 (x) PVIF (11%, 10th year)}

= [100 (x) 5.890] + [1,000 (x) 0.352]

= ₹ 941.00

Now let us discount the cash flows by 13%

NPV = PV (Inflows) (-) PV (Outflows)

= ₹ 837.60 (-) ₹ 850.00

= (-) ₹ 12.40

PV (Inflows) = [(1,000 (x) 10%) (x) PVIFA (13%, 10 years)] + {1,000 (x) PVIF (13%, 10th year)}

= [100 (x) 5.426] + [1,000 (x) 0.295]

= ₹ 837.60

Accordingly, IRR shall be:

= Lower Rate + $\left[\frac{\text{NPV at Lower Rate}}{\text{NPV at Lower Rate} - \text{NPV at Higher Rate}} \times (\text{Higher Rate} (-) \text{Lower Rate}) \right]$

= 11% + $\left[\frac{₹ 91.00}{₹ 91.00 - (-) ₹ 12.40} \times (13.00\% (-) 11.00\%) \right]$

= 12.7602%

Thus, the spread from comparable bond = 12.7602% - 11.8000% = 0.9602%





**Equity Analysis &
Corporate
Valuations**

Question 8:**Equity Analysis and Corporate Valuations**

Calculate the value of share from the following information:

- Profit of the company	₹ 290 crores
- Equity capital of company	₹ 1,300 crores
- Par value of share	₹ 40 each
- Debt ratio of company ($\frac{\text{Debt}}{\text{Debt} + \text{Equity}}$)	27%
- Long run growth rate of the company	8%
- Beta	0.1
- Risk free interest rate	8.7%
- Market returns	10.3%
- Capital expenditure per share	₹ 47
- Depreciation per share	₹ 39
- Change in Working capital	₹ 3.45 per share

Solution:

- R_e	$= R_f (+) \beta [R_m - R_f]$	$= 0.087 + 0.10[0.103 - 0.087]$	$= 8.86\%$
- PAT			$= ₹ 290 \text{ crores}$
- Net Investment	$= [\text{Capital Spending (-) Depreciation (+) Change in Working Capital}] \times (1 - \text{debt})$	$= [(47 (-) 39 (+) 3.45)(1 - 0.27) \text{ per share}] \times \frac{₹ 1,300 \text{ crores}}{₹ 40 \text{ per share}}$	$= ₹ 271.65125 \text{ crores}$
- Thus, FCFE	$= \text{PAT} (-) \text{Net Investment}$	$= ₹ 290 \text{ crores} (-) ₹ 271.65125 \text{ crores}$	$= ₹ 18.34875 \text{ crores}$
- Thus IV of the Share	$= \frac{\text{FCFE}_1 = \text{FCFE}_0(1 + g)}{k_e (-) g}$	$= \frac{₹ 18.34875 \text{ crores}(1 + 0.08)}{0.0886 (-) 0.08}$	$= ₹ 70.90 \text{ per share}$
	No of shares outstanding	$\frac{₹ 1,300 \text{ crores}}{₹ 40 \text{ per share}}$	





Portfolio Management

Question 9:**Portfolio Management**

Mr. Tempest has the following portfolio of four shares:

Name	Beta	Investment (₹ lacs)
Oxy Rin Ltd.	0.45	0.80
Boxed Ltd.	0.35	1.50
Square Ltd.	1.15	2.25
Eclipse Ltd.	1.85	4.50

The risk-free rate of return is 7% and the market rate of return is 14%. You are required to:

- 1) Determine the portfolio return.
- 2) Calculate the portfolio Beta.

Solution

As per CAPM, we know that $R_e = R_f (+) \beta[R_m (-) R_f]$

Calculation of Portfolio Return and Portfolio Beta

Name	Investment (in lacs)	Weight (Wt)	Beta	Wt (x) Beta	$R_e = 7\% (+) \beta(7\%)$	Return (₹)
Oxy Rin Ltd.	0.80	8.84%	0.45	0.0398	10.15%	8,120.00
Boxed Ltd.	1.50	16.57%	0.35	0.0580	9.45%	14,175.00
Square Ltd.	2.25	24.86%	1.15	0.2859	10.05%	33,862.50
Ellipse Ltd.	4.50	49.72%	1.85	0.9199	19.95%	89,775.00
Total	9.05	100.00%		1.3036		1,45,932.50

Thus, Portfolio Return can be calculated as follows:

Alternative 1: $\frac{Return}{Investment} (x) 100$

$$= \frac{₹ 1,45,932.50}{₹ 9,05,000} (x) 100$$

$$= \underline{\underline{16.1251\%}}$$

Alternative 2: Based on Portfolio Beta

$$= R_f (+) \beta[R_m (-) R_f]$$

$$= 7\% (+) 1.3036[14\% (-) 7\%]$$

$$= \underline{\underline{16.1251\%}}$$

Question 10:**Portfolio Management**

Mr. Nirmal Kumar has categorized all the available stock in the market into the following types:

- a) Small cap growth stocks
- b) Small cap value stocks
- c) Large cap growth stocks
- d) Large cap value stocks

Mr. Nirmal Kumar also estimated the weights of the above categories of stocks in the market index. Further, more the sensitivity of returns on these categories of stocks to the three important factors are estimated to be:

Category of Stocks	Weight in Market Index	Factor I (β)	Factor II (Book Price)	Factor III (Inflation)
Small Cap Growth	25%	0.80	1.39	1.35
Small Cap Value	10%	0.90	0.75	1.25

Large Cap Growth	50%	1.165	2.75	8.65
Large Cap Value	15%	0.85	2.05	6.75
Risk Premium		6.85%	(-) 3.50%	0.65%

The rate of return on treasury bonds is 4.5%. You are Required to:

- Using Arbitrage Pricing Theory, determine the expected return on the market index.
- Using Capital Asset Pricing Model (CAPM), determine the expected return on the market index.
- Mr. Nirmal Kumar wants to construct a portfolio constituting only the 'small cap value' and 'large cap growth' stocks. If the target beta for the desired portfolio is 1, determine the composition of his portfolio.

Solution:

a) Determination of Expected Return using APT

As per APT, Expected Return [i.e. $E(R_i)$] = R_f (+) $b_{j1}RP_1$ (+) $b_{j2}RP_2$ (+) $b_{j3}RP_3$ (+) (+) $b_{jn}RP_n$

- Method 1: Portfolio's return

- Small cap growth = $4.5 + (0.80 \times 6.85) + (1.39 \times (-3.5)) + (1.35 \times 0.65)$ = 5.9925%
- Small cap value = $4.5 + (0.90 \times 6.85) + (0.75 \times (-3.5)) + (1.25 \times 0.65)$ = 8.8525%
- Large cap growth = $4.5 + (1.165 \times 6.85) + (2.75 \times (-3.5)) + (8.65 \times 0.65)$ = 8.4780%
- Large cap value = $4.5 + (0.85 \times 6.85) + (2.05 \times (-3.5)) + (6.75 \times 0.65)$ = 7.5350%

Expected return on market index

$$= (0.25 \times 5.9925) + (0.10 \times 8.8525) + (0.50 \times 8.478) + (0.15 \times 7.535) = 7.7526\%$$

- Method 2: Using Formula directly

$$= 4.5\% + [(0.1 \times 0.9) + (0.25 \times 0.8) + (0.15 \times 0.85) + (0.50 \times 1.165)]6.85 + [(0.75 \times 0.10) + (1.39 \times 0.25) + (2.05 \times 0.15) + (2.75 \times 0.5)](-3.5) + [(1.25 \times 0.10) + (1.35 \times 0.25) + (6.75 \times 0.15) + (8.65 \times 0.5)]0.65 = 7.5625\%$$

b) Determination of Expected Return using CAPM

As per CAPM, Expected Return = $R_f + \beta(R_m - R_f)$

- Small cap growth = $4.5 + (6.85 \times 0.80)$ = 9.980%
- Small cap value = $4.5 + (6.85 \times 0.90)$ = 10.665%
- Large cap growth = $4.5 + (6.85 \times 1.165)$ = 12.480%
- Large cap value = $4.5 + (6.85 \times 0.85)$ = 10.3225%

Expected return on market index

$$= (0.25 \times 9.98) + (0.10 \times 10.665) + (0.50 \times 12.45) + (0.15 \times 10.3225) = 11.33\%$$

c) Determination of Composition of Portfolio, if Target Beta = 1.00

Let us assume that Mr. Nirmal will invest $X_1\%$ in small cap value stock and $X_2\%$ in large cap growth stock

$$X_1 + X_2 = 1$$

$$0.90 X_1 + 1.165 X_2 = 1$$

$$0.90 X_1 + 1.165(1 - X_1) = 1$$



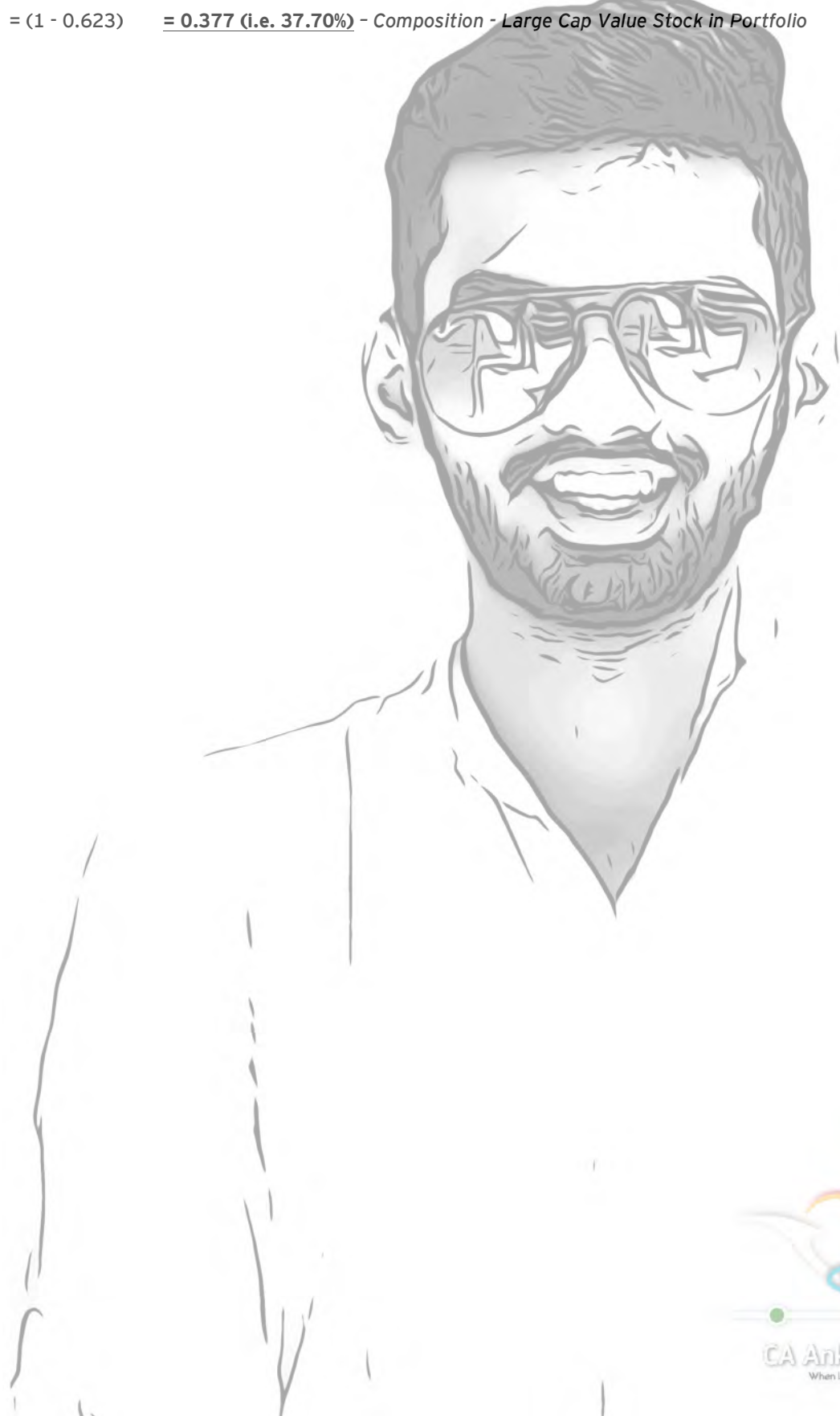
$$0.90 X_1 + 1.165 - 1.16$$

$$5 X_1 = 1$$

$$0.165 = 0.265 X_1$$

Thus, $X_1 = \underline{0.623}$ (i.e. **62.30%**) - Composition - Small Cap Value Stock in Portfolio

Thus, $X_2 = (1 - 0.623) = \underline{0.377}$ (i.e. **37.70%**) - Composition - Large Cap Value Stock in Portfolio





Receivables Management

Question 11:**Receivables Management**

AC Co. Ltd. has a turnover of ₹ 1,600 Lakhs and is expecting growth of 17.90% for the next year. Average credit period is 100 days. The Bad Debt losses are about 1.50% on sales. The administrative cost for collecting receivables is ₹ 8,00,000. AC Co. Ltd. decides to make use of Factoring Services by FS Ltd. on terms as under:

- that the factor will charge commission of 1.75%.
- 15% Risk with recourse and
- Pay an advance on receivables to AC Co. Ltd. at 14% p.a. interest after withholding 10% as reserve.

You are required to calculate the effective cost of factoring to AC Co. Ltd. for the year. Show amount in Lakhs of ₹ with two decimal points. Assume 360 days in a year.

Solution:

Revenue for the upcoming year = ₹ 1,600 lakhs (x) [1 (+) 0.1790] = ₹ **1,886.40 lakhs**

Note: In absence of information regarding the period within which the factor would provide us with the funds, it is assumed that the credit period offered by the factor = our existing credit period = 100 days.

a) Calculation of the Amount of Advance to be paid by the Factor

Particulars	Calculations	₹ (in lacs)
Average Level of Receivables	= ₹ 1,866.40 (x) $\frac{100 \text{ days}}{360 \text{ days}}$	524.00
(-) Factoring Commission	= ₹ 524.00 (x) 1.75%	(9.17)
(-) Factoring Reserve	= ₹ 524.00 (x) 10%	(52.40)
Amount Available for Advance		462.43
(-) Interest deducted by Factor @ 14% p.a.	= ₹ 462.43 (x) 14% (x) $\frac{100 \text{ days}}{360 \text{ days}}$	(17.98)
Amount of Advance to be paid		444.45

b) Calculation of the Annual Cost of Factoring to A Ltd.

Total Outflows on Factoring			Total Savings due to Factoring		
Particulars	Calculation	₹	Particulars	Calculation	₹
Factoring Comm ⁿ	= ₹ 9.17 (x) $\frac{360}{100}$	33.01	Credit Admin Cost	Given	8.00
Interest Charges	= ₹ 17.98 (x) $\frac{360}{100}$	64.74	Bad Debt Saved	= ₹ 1,866.40 (x) 1.5%	28.30
Recourse Risk	= ₹ 1,866.40 (x) 15% (x) 1.5%	4.24			
Total		101.99	Total		36.30

Net Cost of Factoring = Total Outflow (-) Total Savings
 = ₹ 101.99 lakhs (-) ₹ 36.30 lakhs
 = ₹ **65.69 lakhs**

Effective Rate of Interest for the Firm = ₹ 65.69 lakhs / ₹ 444.45 lakhs
 = **14.78% per annum**





Mutual Funds

Question 12:**Mutual Funds**

On 1st April, an open ended scheme of mutual fund had 300 lakh units outstanding with Net Assets Value (NAV) of ₹ 18.75. At the end of April, it issued 6 lakh units at opening NAV plus 2% load, adjusted for dividend equalization. At the end of May, 3 Lakh units were repurchased at opening NAV less 2% exit load adjusted for dividend equalization. At the end of June, 70% of its available income was distributed. In respect of April-June quarter, the following additional information are available:

Particulars	₹ in lakhs
Portfolio Value Appreciation	425.470
Income for April	22.950
Income for May	34.425
Income for June	45.450

You are required to calculate:

- Income available for distribution;
- Issue price at the end of April;
- repurchase price at the end of May; and
- net asset value (NAV) as on 30th June.

Solution:**a) Calculation of Income Available for Distribution**

Particulars	Units (lakhs)	Per unit (₹)	Total (₹ in lakhs)
Income of April	300.00	0.0765	22.9500
(+) Dividend Equalization on Issue	6.00	0.0765	0.4590
	306.00	0.0765	23.4090
(+) Income of May		0.1125	34.4250
	306.00	0.1890	57.8340
(-) Dividend Equalization on Redemption	(3.00)	0.1890	(0.5670)
	303.00	0.1890	57.2670
(+) Income of June		0.1500	45.4500
	303.00	0.3390	102.7170
(-) Dividend Paid		0.2373	(71.9019)
Closing Income Available	303.00	0.1017	30.8151

b) Calculation of Issue Price at the end of April

Particulars	₹
Opening NAV per unit	18.7500
(+) Entry Load @ 2% on Opening NAV	0.3750
(+) Dividend Equalization paid on Issue of Units	0.0765
Effective Issue Price per unit	19.2015

c) **Calculation of Repurchase Price at the end of May**

Particulars	₹
Opening NAV per unit	18.7500
(-) Exit Load @ 2% on Opening NAV	(0.3750)
(+) Dividend Equalization paid on Redemption of Units	0.1890
Effective Repurchase Price per unit	18.5640

d) **Net Asset Value (NAV) as on 30th June**

Particulars	₹ in Lakhs
Opening NAV of the Fund [₹ 18.750 per unit (x) 300 lakh units]	5,625.0000
(+) Portfolio Value Appreciation	425.4700
(+) Income of April, May and June [22.950 + 34.425 + 45.450]	102.8250
(+) Proceeds from Issue of Fresh Units [₹ 19.2015 per unit (x) 6L units]	115.2090
	6,286.5040
(-) Proceeds towards Repurchase [₹ 18.5640 per unit (x) 3L units]	(55,6920)
(-) Income Distributed	(71,9019)
Closing Net Asset Value	6,140.9101
No. of Closing Units [300L + 6L - 3L]	303.0000
NAV per unit as on 30th June = $\frac{\text{Net Assets}}{\text{No. of units outstanding}}$	20.2670

Question 13:

Mutual Funds

ANP Plan, a hedge fund currently has assets of ₹ 20 crore. CA. X, the manager of fund charges a fee of 0.10% of portfolio assets. In addition to it, he charges incentive fee of 2%. The incentive will be linked to gross return each year in excess of the portfolio maximum value since the inception of fund. The maximum value the fund achieved so far since inception of fund about one and half year ago was ₹ 21 crores. You are required to compute the fee payable to CA. X, if return on the fund this year turns out to be (a) 29%, (b) 4.5%, (c) -1.8%

Solution:

Calculation of the fee payable to CA X in each of the three cases:

Particulars	If Return of the fund is		
	29%	4.50%	-1.80%
Fund Value pre Return	20,00,00,000	20,00,00,000	20,00,00,000
Fund value post return = Pre Fund Value (+) Return	25,80,00,000	20,90,00,000	19,64,00,000
Value in excess of the best achieved value of ₹ 21.00 crores	4,80,00,000	-	-
Incentive fees at 2% on Excess Value	9,60,000	-	-
Fixed Fee @ 0.10%	2,00,000	2,00,000	2,00,000
Total Fees payable	11,60,000	2,00,000	2,00,000





Foreign Exchange Exposure [ForEx]

Question 14:**ForEx (Capital Budgeting)**

A multinational company is planning to set up a subsidiary company in India (where hitherto it was exporting) in view of growing demand for its product and competition from other MNCs. The initial project cost (consisting of Plant and Machinery including installation) is estimated to be US\$ 500 million. The net working capital requirements are estimated at US\$ 50 million. The company follows straight line method of depreciation. Presently, the company is exporting two million units every year at a unit price of US\$ 80, its variable cost per unit being US\$ 40.

The Chief Financial Officer has estimated the following operating cost and other data in respect of proposed project:

- (i) Variable operating cost will be US \$ 20 per unit of production;
- (ii) Additional cash fixed cost will be US \$ 30 million p.a. and project's share of allocated fixed cost will be US \$ 3 million p.a. based on principle of ability to share;
- (iii) Production capacity of the proposed project in India will be 5 million units;
- (iv) Expected useful life of the proposed plant is five years with no salvage value;
- (v) Existing working capital investment for production & sale of two million units through exports was US \$ 15 million;
- (vi) Export of the product in the coming year will decrease to 1.5 million units in case the company does not open subsidiary company in India, in view of the presence of competing MNCs that are in the process of setting up their subsidiaries in India;
- (vii) Applicable Corporate Income Tax rate is 35%, and
- (viii) Required rate of return for such project is 12%.

Assuming that there will be no variation in the exchange rate of two currencies and all profits will be repatriated, as there will be no withholding tax, estimate Net Present Value (NPV) of the proposed project in India.

Present Value Interest Factors (PVIF) @ 12% for five years are as below:

Year	1	2	3	4	5
PVIF	0.8929	0.7972	0.7118	0.6355	0.5674

Solution:

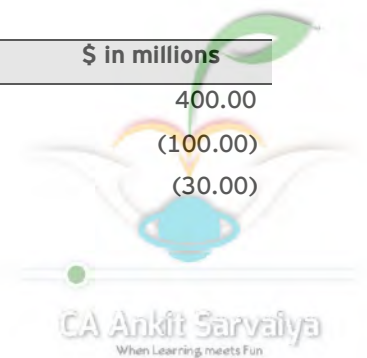
Financial Analysis whether to set up the manufacturing units in India or not may be carried using NPV technique as follows:

1. Incremental Cash Outflows

Particulars	\$ in millions
Cost of Plant and Machinery	500.00
Working Capital Required	50.00
(-) Release of Existing Working Capital	(15.00)
Incremental Cash Outflow	535.00

2. Incremental Cash Inflow after Tax (CFAT)**a. Generated by investment in India for 5 years**

Particulars	\$ in millions
Sales [5 million units (x) \$ 80 per unit]	400.00
(-) Variable Cost per unit [5 million units (x) \$ 20 per unit]	(100.00)
(-) Fixed Cost	(30.00)



(-) Depreciation [$\$ 500 \text{ million} / 5 \text{ years}$]	(100.00)
Earnings before Interest and Tax (EBIT)	170.00
(-) Interest	(-)
Earnings before Tax (EBT)	170.00
(-) Tax Expense @ 35%	(59.50)
Earnings after Tax (PAT)	110.50
(+) Depreciation Expense	100.00
Cash flow after Tax (CFAT) [Year 1 to Year 5]	210.50
Release of Working Capital at the end of 5 years [₹ 50.00 lakhs (-) ₹ 15.00 lakhs]	35.00

b. Cash generation by exports (Opportunity Cost)

Particulars	\$ in millions
Sales [1.50 million units (x) \$ 80 per unit]	120.00
(-) Variable Cost [1.50 million units (x) @ 40 per unit]	(60.00)
Contribution	60.00
(-) Tax Expense @ 35%	(21.00)
Incremental Cash Flow After Tax [Year 1 to Year 5]	39.00

c. Additional CFAT attributable to Foreign Investment

Particulars	\$ in millions
Through setting up subsidiary in India	210.50
Through Exports in India	(39.00)
Contribution	171.50

3. Determination of NPV

Year	CFAT (\$ millions)	PVF @ 12%	PV (\$ million)
0	-535.00	1.0000	(535.0000)
1	171.50	0.8929	153.1324
2	171.50	0.7972	136.7198
3	171.50	0.7118	122.0737
4	171.50	0.6355	108.9883
5	171.50	0.5674	97.3091
5	35.00	0.5674	19.8590
NPV of the Project			103.0822

Question 15:

Following are the details of cash inflows and outflows in foreign currency denominations of MNP Co. an Indian export firm, which has no foreign subsidiaries:

Currency	Inflow	Outflow	Spot Rate	Forward Rate
US \$	4,00,00,000	2,00,00,000	48.01	48.82
French Francs (FFr)	2,00,00,000	80,00,000	7.45	8.12

ForEx

UK £	3,00,00,000	2,00,00,000	75.57	75.98
Japanese Yen (¥)	1,50,00,000	2,50,00,000	3.20	2.40

You are required to:

1. Determine the net exposure of each foreign currency in terms of Rupees.
2. State whether any of the exposure positions offsetting to some extent?

Solution:

1) Determination of the Net Exposure of each Foreign Currency in terms of Rupees

Currency	Inflow	Outflow	Net	Spot Rate	Forward Rate	Difference	Net Exposure
US \$	4,00,00,000	2,00,00,000	2,00,00,000	48.01	48.82	0.81	1,62,00,000
FFr	2,00,00,000	80,00,000	1,20,00,000	7.45	8.12	0.67	80,40,000
UK £	3,00,00,000	2,00,00,000	1,00,00,000	75.57	75.98	0.41	41,00,000
¥	1,50,00,000	2,50,00,000	(1,00,00,000)	3.20	2.40	-0.80	80,00,000

2) Offsetting Positions

- a. Net Exposure in all the currencies are offset by better forward rates. In the case of US \$, FFr and UK £, the net exposure is receivable, and the forward rates are quoted at a premium for these currencies.
- b. In case of Japanese Yen (¥), the net exposure is payable, and the forward rate is quoted at a discount. Therefore, a better forward rate is also offsetting the net payable in Japanese Yen (¥).

Question 16:

ForEx

On January 28, 2013 an importer customer requested a bank to remit Singapore Dollar (SGD) 25,00,000 under an irrevocable LC. However due to bank strikes, the bank could effect the remittance only on February 4, 2013. The interbank market rates were as follows:

		January 28, 2013	February 04, 2013
Bombay	\$ 1	₹ 45.85 / 45.90	₹ 45.92 / 45.97
London	£ 1	\$ 1.7840 / 1.7850	\$ 1.7765 / 1.7775
	£ 1	SGD 3.1575 / 3.1590	SGD 3.1380 / 3.1390

The bank wishes to retain an exchange margin of 0.125%. How much does the customer stand to gain or lose due to the delay? (Calculate the rate in multiples of 0.0001)

Solution:

An importer has SGD 25,00,000 payable. (i.e. FC Payable)

- \$ and £ are the common currencies given to us to calculate the cross rates.
- Thus, it implies that the importer is an **Indian Importer**.

Home Currency = ₹, Foreign Currency = £, \$, SGD

So, the Indian importer has 2 available Alternatives:

- a. Buy SGD, or



b. Sell ₹

Calculation of the ₹ / SGD Implied Rate:

$$\frac{\text{₹}}{\text{SGD}} = \frac{\text{₹}}{\text{\$}} \times \frac{\text{\$}}{\text{£}} \times \frac{\text{£}}{\text{SGD}}$$

The question has given us the following quotes:

- ₹ / \$ (in Bombay) : \$ Rate
- \$ / £ (in London) : £ Rate
- SGD / £ (in London) : £ Rate

Thus, the implied ₹ / SGD rate is:

January 28, 2013	February 04, 2013
$\frac{\text{₹}}{\text{SGD}_{\text{bid}}} = \frac{\text{₹}}{\text{\$}} 45.85 \times \frac{\text{\$}}{\text{£}} 1.7840 \times \frac{\text{£}}{\text{SGD}} \frac{1}{3.1590}$	$\frac{\text{₹}}{\text{SGD}_{\text{bid}}} = \frac{\text{₹}}{\text{\$}} 45.92 \times \frac{\text{\$}}{\text{£}} 1.7765 \times \frac{\text{£}}{\text{SGD}} \frac{1}{3.1390}$
= ₹ / SGD 25.8931 (Customer Sell Rate)	= ₹ / SGD 25.9882 (Customer Sell Rate)
$\frac{\text{₹}}{\text{SGD}_{\text{ask}}} = \frac{\text{₹}}{\text{\$}} 45.90 \times \frac{\text{\$}}{\text{£}} 1.7850 \times \frac{\text{£}}{\text{SGD}} \frac{1}{3.1575}$	$\frac{\text{₹}}{\text{SGD}_{\text{ask}}} = \frac{\text{₹}}{\text{\$}} 45.97 \times \frac{\text{\$}}{\text{£}} 1.7775 \times \frac{\text{£}}{\text{SGD}} \frac{1}{3.1380}$
= ₹ / SGD 25.9482 (Customer Buy Rate)	= ₹ / SGD 26.0394 (Customer Buy Rate)

Since the calculated implied rate is a SGD Rate, and the Indian Importer has to buy SGD, the applicable rate on:

- January 28, 2013 = ₹ / SGD 25.9482
- February 04, 2013 = ₹ / SGD 26.0394

Thus, the effective purchase price per \$ for the Indian Importer = Rate (+) Exchange Margin

- January 28, 2013 = ₹ / SGD 25.9482 (+) 0.125% = ₹ / SGD 25.9807
- February 04, 2013 = ₹ / SGD 26.0394 (+) 0.125% = ₹ / SGD 26.0720

Thus, the loss due to delay = SGD 25,00,000 (x) $\frac{\text{₹}}{\text{SGD}}$ [26.0720 (-) 25.9807]
= ₹ 2,28,269

Question 17:

ForEx

Sun Ltd. is planning to import equipment from Japan at a cost of 3,400 lakh yen. The company may avail loans at 18 percent per annum with quarterly rests with which it can import the equipment. The company has also an offer from Osaka branch of an India based bank extending credit of 180 days at 2 percent per annum against opening of an irrecoverable letter of credit.

Additional information:

- Present exchange rate ₹ 100 = 340 yen
- 180 day's forward rate ₹ 100 = 345 yen
- Commission charges for letter of credit at 2 per cent per 12 months.



Advise the company whether the offer from the foreign branch should be accepted.

Solution:

In the given case, Sun Ltd. has two options:

- **Option 1:** To finance the purchase by availing loan at 18% per annum
- **Option 2:** To accept the offer from foreign branch

Evaluation of the two options:

1) Option 1:

Cost of the Equipment = ₹ 3,400 lakhs
Applicable Exchange Rate = Spot Rate = ₹/₹100 = 340 i.e. ₹/₹ 3.40

Equipment Cost in ₹ (that need to be borrowed today to finance the purchase of the equipment) shall be:

= ₹ 3,400 lakhs (x) ₹/₹¹/_{3.40}
= ₹ 1,000 lakhs

Effective Equipment Purchase Cost = Amount of Borrowing (+) Interest**
= ₹ 1,000 lakhs (x) [1 (+) {0.18 (x) ³/₁₂}]²
= ₹ 1,092.025 lakhs

**** Since the question does not state that the interest will be paid at the end of each quarter, it is assumed that interest is payable at the end of 6 months and as a result, interest is also chargeable on the interest component of the First quarter**

2) Option 2:

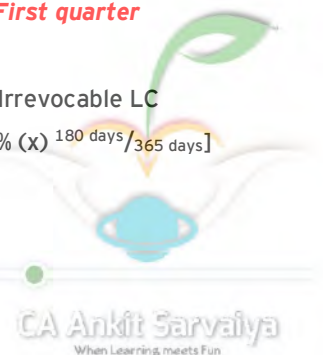
Commission Charges of Letter of Credit = 2% p.a. of ₹ 3,400 lakhs (for 6 months)
= 1% of ₹ 3,400 lakhs = ₹ 34 lakhs

Amount to be borrowed from Indian Bank to meet the cost of Letter of Credit = ₹ 34 lakhs (x) ₹/₹¹/_{3.40}
= ₹ 10 lakhs

Interest Payable** on this borrowed amount = ₹ 10 lakhs (x) [1 (+) {0.18 (x) ³/₁₂}]²
= ₹ 10.920 lakhs

**** As this amount would be borrowed by way of Loan and the question states that interest would be payable at quarterly rests, however, is ambiguous regarding actual payment date, it is assumed that interest is paid at the end of 6 months and as a result, interest is also chargeable on the interest component of the First quarter**

Amount to be payable at the end of 180 days = Amount of Equipment (+) Interest on Irrevocable LC
= ₹ 3,400 lakhs (+) [₹ 3,400 lakhs (x) 2% (x) ^{180 days}/_{365 days}]
= ₹ 3,433.534 lakhs

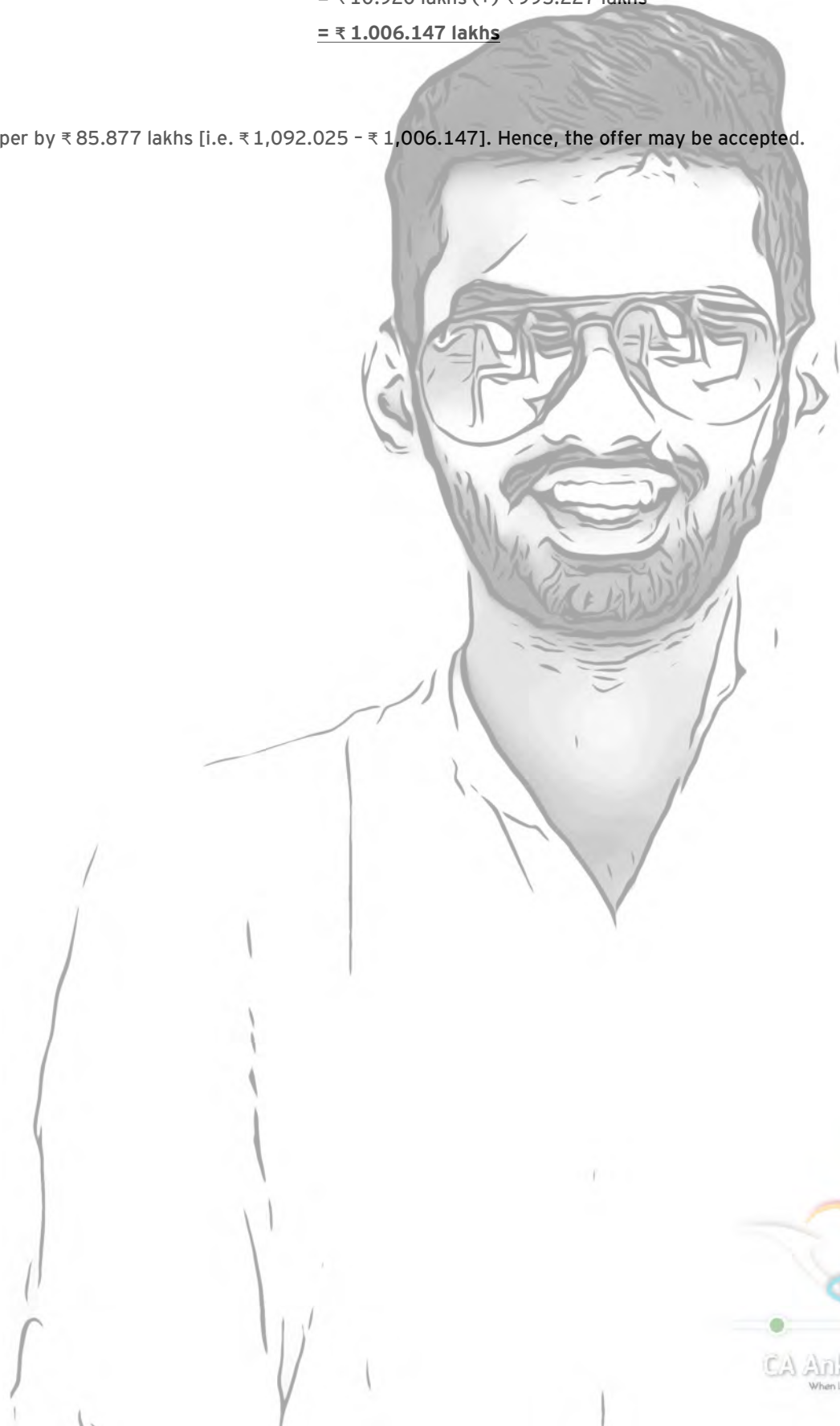


₹ Cost of Amount Payable at the end of 180 days = ₹ 3,433.534 lakhs $\times \frac{1}{1.345}$ [i.e. 180 days forward rate]
= ₹ 995.227 lakhs

Thus, total cost under this alternative = Cost of LC (+) Amount payable on the 180th day
= ₹ 10.920 lakhs (+) ₹ 995.227 lakhs
= ₹ 1,006.147 lakhs

Conclusion:

Option 2 is cheaper by ₹ 85.877 lakhs [i.e. ₹ 1,092.025 - ₹ 1,006.147]. Hence, the offer may be accepted.





**Mergers &
Acquisitions**

Question 18:**Mergers and Acquisitions**

XYZ Ltd. wants to purchase ABC Ltd. by exchanging 0.7 of its share for each share of ABC Ltd. Relevant financial data are as follows:

Particulars	XYZ Ltd.	ABC Ltd.
Equity Shares outstanding	10,00,000	4,00,000
EPS (₹)	40.00	28.00
Market Price per share (₹)	250.00	160.00

You are required to:

1. Illustrate the impact of merger on EPS of both the companies.
2. The management of ABC Ltd. has quoted a share exchange ratio of 1:1 for the merger. Assuming that P/E ratio of XYZ Ltd. will remain unchanged after the merger, what will be the gain from merger for ABC Ltd.?
3. What will be the gain/loss to shareholders of XYZ Ltd.?
4. Determine the maximum exchange ratio acceptable to shareholders of XYZ Ltd.

Solution:**a) Impact on EPS, when the swap Ratio is 0.70:1**

- Determination of Earnings and PE Ratio of Both the Companies

Particulars	XYZ Ltd. (Acquirer)	ABC Ltd. (Target)
Earnings per share	40.00	28.00
(x) No. of Equity Shares o/s	10,00,000	4,00,000
Earnings after Tax (EAT)	₹ 4,00,00,000	₹ 1,12,00,000
Market Price per share	250.00	160.00
PE Ratio = $\frac{MPS}{EPS}$	6.25 times	5.71 times

→ Total Earnings of the Merged Entity = ₹ 4,00,00,000 (+) ₹ 1,12,00,000 = ₹ 5,12,00,000

→ Equity Shares of the Merged Entity

Existing shares of the Acquirer Company	10,00,000
(+) Shares issued to the Target Company [4,00,000 shares (x) 0.70]	2,80,000
Total Shares of the Merged entity	12,80,000

Thus, EPS of the merged entity = ₹ 5,12,00,000 / 12,80,000 shares = ₹ 40.00 per share

Equivalent EPS of the shareholders of ABC Ltd. = ₹ 40/share (x) 0.70 = ₹ 28.00 per share

There is no gain/loss to the shareholders in terms of EPS post the merger, since the swap of 0.70:1 is itself based on EPS.

b) Gain from Merger, when Swap Ratio is 1:1 to both the firms

→ Total Earnings of the Merged Entity = ₹ 4,00,00,000 (+) ₹ 1,12,00,000 = ₹ 5,12,00,000

→ Equity Shares of the Merged Entity

Existing shares of the Acquirer Company	10,00,000
(+) Shares issued to the Target Company [4,00,000 shares (x) 1.00]	4,00,000
Total Shares of the Merged entity	14,00,000

Thus, EPS of the merged entity = ₹ 5,12,00,000 / 14,00,000 shares = ₹ 36.5714 per share
 Equivalent EPS of the shareholders of ABC Ltd. = ₹ 36.5714 / share (x) 1.00 = ₹ 36.5714 per share

MPS post merger of the merged entity = ₹ 36.5714 (x) 6.25 times = ₹ 228.5714 per share

Gain to the shareholders of:

- XYZ Ltd. = ₹ 228.5718 per share (-) ₹ 250.0000 per share = ₹ 21.4286 per share (Loss)
 - ABC Ltd. = ₹ 228.5718 per share (-) ₹ 160.0000 per share = ₹ 68.5714 per share (Gain)

c) **Maximum Exchange Ratio acceptable to the shareholders of XYZ Ltd.**

Particulars	₹
Market Value of the Merged Entity [₹ 228.5714 per share (x) 14,00,000 shares]	32,00,00,000
(-) Market Value of XYZ Ltd. (pre merger) [₹ 250 per share (x) 10,00,000 shares]	(25,00,00,000)
Market Value of the merged entity attributable to ABC Ltd	7,00,00,000
Market Price per share of XYZ Ltd. (pre merger)	250.00
Maximum No. of shares that can be offered	2,80,000

Thus, Maximum Acceptable Swap Ratio = $\frac{2,80,000 \text{ shares}}{4,00,000 \text{ shares}}$ = 0.70:1

This implies that for every one share of ABC Ltd, XYZ Ltd. shall issue a maximum of 0.70 shares of its own.

Question 19:

Mergers and Acquisitions

The following is the Balance-sheet of Grape Fruit Company Ltd as at March 31st 2011.

Liabilities	₹ in lakhs	Assets	₹ in lakhs
Equity shares of ₹ 100 each	600.00	Land and Building	200.00
14% Preference shares of ₹ 100 each	200.00	Plant and Machinery	300.00
13% Debentures	200.00	Furniture and Fixtures	50.00
Debenture Interest accrued and payable	26.00	Inventory	150.00
Loan from Bank	74.00	Sundry Debtors	70.00
Trade Creditors	340.00	Cash at Bank	130.00
		Preliminary Expenses	10.00
		Cost of Issue of Debentures	5.00
		Profit and Loss Account	525.00
Total	1,440.00		1,440.00

The Company did not perform well and has suffered sizable losses during the last few years. However, it is felt that the company could be nursed back to health by proper financial restructuring. Consequently, the following scheme of reconstruction has been drawn up:

- Equity shares are to be reduced to ₹ 25/- per share, fully paid up;
- Preference shares are to be reduced (with coupon rate of 10%) to equal number of shares of ₹ 50 each, fully paid up.
- Debenture holders have agreed to forgo the accrued interest due to them. In the future, the rate of interest on debentures is to be reduced to 9 percent.
- Trade creditors will forego 25 percent of the amount due to them.

- e. The company issues 6 lakh of equity shares at ₹ 25 each and the entire sum was to be paid on application. The entire amount was fully subscribed by promoters.
- f. Land and Building was to be revalued at ₹ 450 lakhs, Plant and Machinery was to be written down by ₹ 120 lakhs and a provision of ₹ 15 lakhs had to be made for bad and doubtful debts.

Required:

- 1) Show the impact of financial restructuring on the company's activities.
- 2) Prepare the fresh balance sheet after the reconstruction is completed on the basis of the above proposals

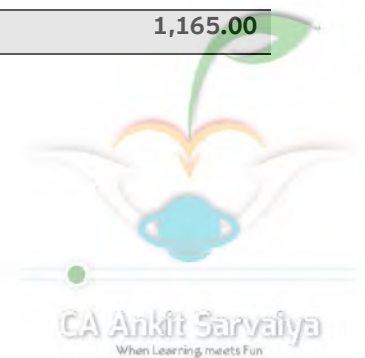
Solution:

Determination of Net Benefits to Grape Ltd. on account of Internal reconstruction

Particulars	₹ in lakhs
Reduction in Equity Share Capital [6 lakh shares (x) ₹ 75 per share]	450.00
(+) Reduction in Preference Share Capital [2 lakh shares (x) ₹ 50 per share]	100.00
(+) Waiver of Outstanding Debenture Interest	26.00
(+) Waiver of Trade Creditors [₹ 340 (x) 25%]	85.00
(+) Upward Revaluation of Land and Building [₹ 450 lakhs (-) ₹ 200 lakhs]	250.00
(-) Amount of Profit and Loss account balance written off	(525.00)
(-) Preliminary Expenses written off	(10.00)
(-) Cost of Debentures written off	(5.00)
(-) Provision for Bad Debts created	(15.00)
(-) Downward Revaluation of Plant and Machinery [₹ 300 lakhs (-) ₹ 180 lakhs]	(120.00)
Capital Reserve	236.00

**Balance Sheet of Grape Ltd.
As at March 31, 2011 (And Reduced)**

Liabilities	₹ in lakhs	Assets	₹ in lakhs
12 lakh equity shares of ₹ 25 each	300.00	Land and Building	450.00
10% Preference Shares of ₹ 50 each	100.00	Plant and Machinery	180.00
Capital Reserve (Refer calculation above)	236.00	Furniture and Fixtures	50.00
9% Debentures	200.00	Inventory	150.00
Loan from Bank	74.00	Sundry Debtors	70.00
Trade Creditors [₹ 340 lakhs (x) 75%]	255.00	(-) Provision for Doubtful Debts	(15.00)
		Cash in Hand	280.00
		[₹ 130 lacs (+) (6 lac shares (x) ₹ 25/share)]	
Total	1,165.00		1,165.00





Theory

Question 20:

Theory Section

Write short notes on:

- a) Reverse Stock Split
- b) Money Market Mutual Fund
- c) Processes of Strategic Decision Making
- d) Asset Securitization
- e) External Commercial Borrowings

Solution:

a) Reverse Stock Split

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 before split up, the number of shares would be equal to 20 million after the reverse split up.

Reasons for Reverse Split Up

Generally, company carries out reverse split up due to following reasons:

→ Avoiding delisting from stock exchange:

Sometimes as per the stock exchange regulation if the price of shares of a company goes below a limit it can be delisted. To avoid such delisting company may resort to reverse stock split up.

→ Avoiding removal from constituents of Index:

If company's share is one of the constituents of market index then to avoid their removal of scrip from this list, the company may take reverse split up route.

→ 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.

→ To attract Institutional Investors and Mutual Funds:

It might be possible that institutional investors may be shying away from acquiring low value shares to attract these investors the company may adopt the route of "Reverse Stock Split" to increase the price per share.

b) Money Market Mutual Fund

An important part of financial market is Money market. It is a market for short-term money. It plays a crucial role in maintaining the equilibrium between the short-term demand and supply of money. Such schemes invest in safe highly liquid instruments included in commercial papers certificates of deposits and government securities.



Accordingly, the Money Market Mutual Fund (MMMF) schemes generally provide high returns and highest safety to the ordinary investors. MMMF schemes are active players of the money market. They channelize the idle short funds, particularly of corporate world, to those who require such funds. This process helps those who have idle funds to earn some income without taking any risk and with surety that whenever they will need their funds, they will get (generally in maximum three hours of time) the same. Short-term/emergency requirements of various firms are met by such Mutual Funds.

Participation of such Mutual Funds provide a boost to money market and help in controlling the volatility.

c) Processes of Strategic Decision Making

Capital investment is the springboard for wealth creation. In a world of economic uncertainty, the investors want to maximize their wealth by selecting optimum investment and financial opportunities that will give them maximum expected returns at minimum risk. Since management is ultimately responsible to the investors, the objective of corporate financial management should implement investment and financing decisions which should satisfy the shareholders by placing them all in an equal, optimum financial position. The satisfaction of the interests of the shareholders should be perceived as a means to an end, namely maximization of shareholders' wealth. Since capital is the limiting factor, the problem that the management will face is the strategic allocation of limited funds between alternative uses in such a manner, that the companies have the ability to sustain or increase investor returns through a continual search for investment opportunities that generate funds for their business and are more favorable for the investors.

Therefore, all businesses need to have the following three fundamental essential elements:

- 1) A clear and realistic strategy,
- 2) The financial resources, controls and systems to see it through and
- 3) The right management team and processes to make it happen.

d) Asset Securitization

Securitization is a process of transformation of illiquid asset into security which may be traded later in the open market. It is the process of transformation of the assets of a lending institution into negotiable instruments. The term 'securitization' refers to both switching away from bank intermediation to direct financing via capital market and/or money market, and the transformation of a previously illiquid asset like automobile loans, mortgage loans, trade receivables, etc. into marketable instruments.

This is a method of recycling of funds. It is beneficial to financial intermediaries, as it helps in enhancing lending funds. Future receivables, EMIs and annuities are pooled together and transferred to a special purpose vehicle (SPV). These receivables of the future are shifted to mutual funds and bigger financial institutions. This process is similar to that of commercial banks seeking refinance with NABARD, IDBI, etc.

e) External Commercial Borrowings

ECB includes bank loans, supplier credit, securitized instruments, credit from export credit agencies and borrowings from multilateral financial institutions. These securitized instruments may be FRNs, FRBs etc. Indian corporate sector is permitted to raise finance through ECBs within the framework of the policies and procedures



prescribed by the Central Government. Multilateral financial institutions like IFC, ADB, AFIC, CDC are providing such facilities while the ECB policy provides flexibility in borrowing consistent with maintenance of prudential limits for total external borrowings, its guiding principles are to keep borrowing maturities long, costs low and encourage infrastructure/core and export sector financing which are crucial for overall growth of the economy. The government of India, from time to time changes the guidelines and limits for which the ECB alternative as a source of finance is pursued by the corporate sector. During past decade the government has streamlined the ECB policy and procedure to enable the Indian companies to have their better access to the international financial markets.

The government permits the ECB route for variety of purposes namely expansion of existing capacity as well as for fresh investment. But ECB can be raised through internationally recognized sources. There are caps and ceilings on ECBs so that macro economy goals are better achieved. Units in SEZ are permitted to use ECBs under a special window.

