PAPER – 2: STRATEGIC FINANCIAL MANAGEMENT

QUESTIONS AND ANSWERS

QUESTIONS

International Capital Budgeting

1. XY Limited is engaged in large retail business in India. It is contemplating for expansion into a country of Africa by acquiring a group of stores having the same line of operation as that of India.

   The exchange rate for the currency of the proposed African country is extremely volatile. Rate of inflation is presently 40% a year. Inflation in India is currently 10% a year. Management of XY Limited expects these rates likely to continue for the foreseeable future.

   Estimated projected cash flows, in real terms, in India as well as African country for the first three years of the project are as follows:

	Year – 0	Year – 1	Year – 2	Year - 3
Cash flows in Indian ₹ (000)	-50,000	-1,500	-2,000	-2,500
Cash flows in African Rands (000)	-2,00,000	+50,000	+70,000	+90,000

   XY Ltd. assumes the year 3 nominal cash flows will continue to be earned each year indefinitely. It evaluates all investments using nominal cash flows and a nominal discounting rate. The present exchange rate is African Rand 6 to ₹ 1.

   You are required to calculate the net present value of the proposed investment considering the following:

   (i) African Rand cash flows are converted into rupees and discounted at a risk adjusted rate.

   (ii) All cash flows for these projects will be discounted at a rate of 20% to reflect it's high risk.

   (iii) Ignore taxation.

	Year - 1	Year - 2	Year - 3
PVIF@20%	.833	.694	.579

Leasing

2. Khalid Tour Operator Ltd. is considering buying a new car for its fleet for local touring purpose. Purchase Manager has identified Renault Duster model car for acquisition.

Company can acquire it either by borrowing the fund from bank at 12% p.a. or go for leasing option involving yearly payment (in the end) of ₹ 2,70,000 for 5 years.

The new car shall cost ₹ 10,00,000 and would be depreciable at 25% as per WDV method for its owner. The residual value of car is expected to be ₹ 67,000 at the end of 5 years.

The corporate tax rate is 33%. You are required to:

(a) Calculate which of the two options borrowings or leasing shall be financially more advantageous for the Company.

(b) Measure the sensitivity of Leasing/ Borrowing Decision in relation to each of the following parameters:

(i) Rate of Borrowing

(ii) Residual Value

(iii) Initial Outlay

Among above which factor is more sensitive.

Swaps

3. NoBank offers a variety of services to both individuals as well as corporate customers. NoBank generates funds for lending by accepting deposits from customers who are paid interest at PLR which keeps on changing.

NoBank is also in the business of acting as intermediary for interest rate swaps. Since it is difficult to identify matching client, NoBank acts counterparty to any party of swap.

Sleepless approaches NoBank who have already have ₹ 50 crore outstanding and paying interest @PLR+80bp p.a. The duration of loan left is 4 years. Since Sleepless is expecting increase in PLR in coming year, he asked NoBank for arrangement of interest of interest rate swap that will give a fixed rate of interest.

As per the terms of agreement of swap NoBank will borrow ₹50 crore from Sleepless at PLR+80bp per annuam and will lend ₹ 50 crore to Sleepless at fixed rate of 10% p.a. The settlement shall be made at the net amount due from each other. For this services NoBank will charge commission @0.2% p.a. if the loan amount. The present PLR is 8.2%.

You as a financial consultant of NoBank have been asked to carry out scenario analysis of this arrangement.

Three possible scenarios of interest rates expected to remain in coming 4 years are as follows:

	Year 1	Year 2	Year 3	Year 4
Scenario 1	10.25	10.50	10.75	11.00
Scenario 2	8.75	8.85	8.85	8.85
Scenario 3	7.20	7.40	7.60	7.70

Assuming that cost of capital is 10%, whether this arrangement should be accepted or not.

Security Analysis

4. Two companies A Ltd. and B Ltd. paid a dividend of ₹3.50 per share. Both are anticipating that dividend shall grow @ 8%. The beta of A Ltd. and B Ltd. are 0.95 and 1.42 respectively.

   The yield on GOI Bond is 7% and it is expected that stock market index shall increase at an annual rate of 13%. You are required to determine:

   (a) Value of share of both companies.

   (b) Why there is a difference in the value of shares of two companies.

   (c) If current market price of share of A Ltd. and B Ltd. are ₹74 and ₹55 respectively. As an investor what course of action should be followed?

5. The data given below relates to a convertible bond:

Face value	₹ 250
Coupon rate	12%
No. of shares per bond	20
Market price of share	₹ 12
Straight value of bond	₹ 235
Market price of convertible bond	₹ 265

   Calculate:

   (i) Stock value of bond.

   (ii) The percentage of downside risk.

   (iii) The conversion premium

   (iv) The conversion parity price of the stock.

6. Delta Ltd.'s current financial year's income statement reports its net income as ₹ 15,00,000. Delta's marginal tax rate is 40% and its interest expense for the year was ₹ 15,00,000. The company has ₹ 1,00,00,000 of invested capital, of which 60% is debt. In addition, Delta Ltd. tries to maintain a Weighted Average Cost of Capital (WACC) of 12.6%.

(i) Compute the operating income or EBIT earned by Delta Ltd. in the current year.

(ii) What is Delta Ltd.'s Economic Value Added (EVA) for the current year?

(iii) Delta Ltd. has 2,50,000 equity shares outstanding. According to the EVA you computed in (ii), how much can Delta pay in dividend per share before the value of the company would start to decrease? If Delta does not pay any dividends, what would you expect to happen to the value of the company?

Capital Budgeting

7. XY Ltd. has under its consideration a project with an initial investment of ₹ 1,00,000. Three probable cash inflow scenarios with their probabilities of occurrence have been estimated as below:

Annual cash inflow (₹)	20,000	30,000	40,000
Probability	0.1	0.7	0.2

The project life is 5 years and the desired rate of return is 20%. The estimated terminal values for the project assets under the three probability alternatives, respectively, are ₹ 0, 20,000 and 30,000.

You are required to:

(i) Find the probable NPV;

(ii) Find the worst-case NPV and the best-case NPV; and

(iii) State the probability occurrence of the worst case, if the cash flows are perfectly positively correlated over time.

Indian Capital Market

8. From the following data for Government securities, calculate the forward rates:

Face value (₹)	Interest rate	Maturity (Year)	Current price (₹)
1,00,000	0%	1	91,500
1,00,000	10%	2	98,500
1,00,000	10.5%	3	99,000

9. BSE 5000

Value of portfolio	₹ 10,10,000
Risk free interest rate	9% p.a.
Dividend yield on Index	6% p.a.
Beta of portfolio	1.5

We assume that a future contract on the BSE index with four months maturity is used to hedge the value of portfolio over next three months. One future contract is for delivery of 50 times the index.

Based on the above information calculate:

(i) Price of future contract.

(ii) The gain on short futures position if index turns out to be 4,500 in three months.

Mergers and Acquisitions

10. XY Ltd. has two major operating divisions, furniture manufacturing and real estate, with revenues of ₹ 2600 crore and ₹ 6200 crore respectively. Following financial information is available.

Balance Sheet as on 31-3-2015

Liabilities	Amount (₹ Crore)	Assets	Amount (₹ Crore)
Ordinary Shares (₹10 Per Share)	500	Land and Buildings	800
Reserves	1300	Plant and Machinery	1400
Secured Term Loans	600	Current Assets	2500
13% Debenture (₹100 par)	500		
Current Liabilities	1800		
	4700		4700

Summarised cash flow data for XY Ltd. is as follows:

	Amount (₹ Crore)
Sales	8800
Operating expenses	8030
Head Office Expenses	80
Interest	110
Taxation	140
Dividends	150

The company's current share price is ₹ 118.40, and each debenture is trading in market at ₹ 131.

Projected financial data (in ₹ Crore) in real terms (excluding depreciation) of the two divisions is as follows:

Year	1	2	3	4	5	6 Onwards
Furniture Manufacturing						
Operating Profit before Tax	450	480	500	520	570	600
Allocated HO Overheads*	40	40	40	40	40	40
Depreciation	100	80	70	80	80	80
Real Estate						
Operating Profit before Tax	320	400	420	440	460	500
Allocated HO Overheads*	40	30	30	30	30	30
Depreciation	50	50	50	50	50	50

* Allocated HO Overheads reflect actual cash flows.

Other Information:

- Applicable Corporate tax rate is of 30%, payable in the year, the relevant cash flow arises.
- Inflation is expected to remain at approximately 3% per year.
- The risk free rate is 5.5% and the market return 14%.
- XY Ltd.'s equity beta is 1.15.
- The average equity betas in the Furniture Manufacturing and Realty Sectors are 1.3 and 0.9 respectively and the gearing levels in Furniture Manufacturing and Realty sectors by market values are 70% equity 30% debt and 80% equity 20% debt respectively.
- The current cost of the debentures and long term loan are almost identical.
- The debentures are redeemable at par in 15 years' time.

The company is considering a demerger whereby the two divisions shall be floated separately on the stock market.

Terms of Demerger

(1) The debentures would be serviced by the real estate division and the long term loans by the furniture manufacturing division.

(2) The existing equity would be split evenly between the divisions, although new ordinary shares would be issued to replace existing shares.

(3) If a demerger occurs allocated overhead would rise to ₹ 60 crore per year for each company.

(4) Demerger would involve single one time after tax cost of ₹ 160 crore in the first year which would be shared equally by the two companies. There would be no other significant impact on expected cash flows.

Required

Using real cash flows and time horizon of 15 year time and infinite period, evaluates whether or not it is expected to be financially advantageous to the original shareholders of XY Ltd. for the company to separately float the two divisions on the stock market.

Note: In any gearing estimates the Furniture Manufacturing division may be assumed to comprise 55% of the market value of equity of XY Ltd, and Real Estate division 45%.

Year	1	2	3	4	5	6 -15
PVAF@10%	0.909	0.821	0.751	0.683	0.621	3.815
PVAF@8.5%	0.922	0.849	0.783	0.722	0.665	4.364

11. Two companies Bull Ltd. and Bear Ltd. recently have been merged. The merger initiative has been taken by Bull Ltd. to achieve a lower risk profile for the combined firm in spite of fact that both companies belong to different industries and disclose a little co-movement in their profit earning streams. Though there is likely to synergy benefits to the tune of ₹ 7 crore from proposed merger. Further both companies are equity financed and other details are as follows:

	Market Capitalization	Beta
Bull Ltd.	₹1000 crore	1.50
Bear Ltd.	₹500 crore	0.60

Expected Market Return and Risk Free Rate of Return are 13% and 8% respectively. Shares of merged entity have been distributed in the ratio of 2:1 i.e. market capitalization just before merger. You are required to:

(a) Calculate return on shares of both companies before merger and after merger.

(b) Calculate the impact of merger on Mr. X, a shareholder holding 4% shares in Bull Ltd. and 2% share of Bear Ltd.

Portfolio Theory

12. A study by a Mutual fund has revealed the following data in respect of three securities:

Security	σ (%)	Correlation with Index, Pm
A	20	0.60
B	18	0.95
C	12	0.75

The standard deviation of market portfolio (BSE Sensex) is observed to be 15%.

(i) What is the sensitivity of returns of each stock with respect to the market?

(ii) What are the covariances among the various stocks?

(iii) What would be the risk of portfolio consisting of all the three stocks equally?

(iv) What is the beta of the portfolio consisting of equal investment in each stock?

(v) What is the total, systematic and unsystematic risk of the portfolio in (iv)?

13. An investor holds two stocks A and B. An analyst prepared ex-ante probability distribution for the possible economic scenarios and the conditional returns for two stocks and the market index as shown below:

Economic scenario	Probability	Conditional Returns %		
		A	B	Market
Growth	0.40	25	20	18
Stagnation	0.30	10	15	13
Recession	0.30	-5	-8	-3

The risk free rate during the next year is expected to be around 11%. Determine whether the investor should liquidate his holdings in stocks A and B or on the contrary make fresh investments in them. CAPM assumptions are holding true.

Money Market Instruments

14. AXY Ltd. is able to issue commercial paper of ₹ 50,00,000 every 4 months at a rate of 12.5% p.a. The cost of placement of commercial paper issue is ₹ 2,500 per issue. AXY Ltd. is required to maintain line of credit ₹ 1,50,000 in bank balance. The applicable income tax rate for AXY Ltd. is 30%. What is the cost of funds (after taxes) to AXY Ltd. for commercial paper issue? The maturity of commercial paper is four months.

Financial Services

15. M/s Atlantic Company Limited with a turnover of ₹ 4.80 croresis expecting growth of 25% for forthcoming year. Average credit period is 90 days. The past experience shows that bad debt losses are 1.75% on sales. The Company's administering cost for collecting receivable is ₹ 6,00,000/-.

It has decided to take factoring services of Pacific Factors on terms that factor will by receivable by charging 2% commission and 20% risk with recourse. The Factor will pay advance on receivables to the firm at 16% interest rate per annum after withholding 10% as reserve.

Calculate the effective cost of factoring to the firm. (Assume 360 days in a year).

Dividend Decisions

16. Telbel Ltd. is considering undertaking a major expansion an immediate cash outlay of ₹ 150 crore. The Board of Director of company are expecting to generate an additional profit of ₹ 15.30 crore after a period of one year. Further, it is expected that this additional profit shall grow at the rate of 4% for indefinite period in future.

    Presently, Telbel Ltd. is completely equity financed and has 50 crore shares of ₹10 each. The current market price of each share is ₹ 22.60 (cum dividend). The company has paid a dividend of ₹ 1.40 per share in last year. For the last few years dividend is increasing at a compound rate of 6% p.a. and it is expected to be continued in future also. This growth rate shall not be affected by expansion project in any way.

    Board of Directors are considering following ways of financing the possible expansion:

    (1) A right issue on ratio of 1:5 at price of ₹15 per share.

    (2) A public issue of shares.

    In both cases the dividend shall become payable after one year.

    You as a Financial Consultant required to:

    (a) Determine whether it is worthwhile to undertake the project or not.

    (b) Calculate ex-dividend market price of share if complete expansion is financed from the right issue.

    (c) Calculate the number of new equity shares to be issued and at what price assuming that new shareholders do not suffer any loss after subscribing new shares.

    (d) Calculate the total benefit from expansion to existing shareholders under each of two financing option.

Foreign Exchange Risk Management

17. Nitrogen Ltd, a UK company is in the process of negotiating an order amounting to €4 million with a large German retailer on 6 months credit. If successful, this will be the first time that Nitrogen Ltd has exported goods into the highly competitive German market. The following three alternatives are being considered for managing the transaction risk before the order is finalized.

    (i) Invoice the German firm in Sterling using the current exchange rate to calculate the invoice amount.

    (ii) Alternative of invoicing the German firm in € and using a forward foreign exchange contract to hedge the transaction risk.

    (iii) Invoice the German first in € and use sufficient 6 months sterling future contracts (to the nearly whole number) to hedge the transaction risk.

Following data is available:

Spot Rate	€ 1.1750 - €1.1770/£
6 months forward premium	0.60-0.55 Euro Cents
6 months further contract is currently trading at	€1.1760/£
6 months future contract size is	£62500
Spot rate and 6 months future rate	€1.1785/£

Required:

(a) Calculate to the nearest £ the receipt for Nitrogen Ltd, under each of the three proposals.

(b) In your opinion, which alternative would you consider to be the most appropriate and the reason thereof.

18. Following information relates to AKC Ltd. which manufactures some parts of an electronics device which are exported to USA, Japan and Europe on 90 days credit terms.

Cost and Sales information:

	Japan	USA	Europe
Variable cost per unit	₹225	₹395	₹510
Export sale price per unit	Yen 650	US$10.23	Euro 11.99
Receipts from sale due in 90 days	Yen 78,00,000	US$1,02,300	Euro 95,920

Foreign exchange rate information:

	Yen/₹	US$/₹	Euro/₹
Spot market	2.417-2.437	0.0214-0.0217	0.0177-0.0180
3 months forward	2.397-2.427	0.0213-0.0216	0.0176-0.0178
3 months spot	2.423-2.459	0.02144-0.02156	0.0177-0.0179

Advice AKC Ltd. by calculating average contribution to sales ratio whether it should hedge it's foreign currency risk or not.

19. AMK Ltd. an Indian based company has subsidiaries in U.S. and U.K.

Forecasts of surplus funds for the next 30 days from two subsidiaries are as below:

U.S.	$12.5 million
U.K.	£ 6 million

Following exchange rate information is obtained:

	$/₹	£/₹
Spot	0.0215	0.0149
30 days forward	0.0217	0.0150

Annual borrowing/deposit rates (Simple) are available.

₹	6.4%/6.2%
$	1.6%/1.5%
£	3.9%/3.7%

The Indian operation is forecasting a cash deficit of ₹500 million.

It is assumed that interest rates are based on a year of 360 days.

(i) Calculate the cash balance at the end of 30 days period in ₹ for each company under each of the following scenarios ignoring transaction costs and taxes:

(a) Each company invests/finances its own cash balances/deficits in local currency independently.

(b) Cash balances are pooled immediately in India and the net balances are invested/borrowed for the 30 days period.

(ii) Which method do you think is preferable from the parent company's point of view?

20. Write a short note on

(a) Nostro, Vostro and Loro Accounts

(b) Characteristics of Financial Leasing

(c) Marking to Market

(d) Relevant assumptions of CAPM

(e) Exchange Traded Funds

SUGGESTED ANSWERS / HINTS

1. **Calculation of NPV**

Year	0	1	2	3
Inflation factor in India	1.00	1.10	1.21	1.331
Inflation factor in Africa	1.00	1.40	1.96	2.744
Exchange Rate (as per IRP)	6.00	7.6364	9.7190	12.3696
Cash Flows in ₹'000				

Real	-50000	-1500	-2000	-2500
Nominal (1)	-50000	-1650	-2420	-3327.50
Cash Flows in African Rand '000				
Real	-200000	50000	70000	90000
Nominal	-200000	70000	137200	246960
In Indian ₹'000 (2)	-33333	9167	14117	19965
Net Cash Flow in ₹ '000 (1)+(2)	-83333	7517	11697	16637
PVF@20%	1	0.833	0.694	0.579
PV	-83333	6262	8118	9633

NPV of 3 years = -59320 (₹ '000)

NPV of Terminal Value = $\frac{16637}{0.20} \times 0.579 = 48164$ (₹'000)

Total NPV of the Project = -59320 (₹ '000) + 48164 (₹'000) = -11156 (₹'000)

2. Working Notes:

(i) Calculation of Tax Benefit on Depreciation/ Short Term Capital Loss

Year	Opening WDV	Depreciation	Closing WDV	Tax Shield
1	10,00,000	2,50,000	7,50,000	82,500
2	7,50,000	1,87,500	5,62,500	61,875
3	5,62,500	1,40,625	4,21,875	46,406
4	4,21,875	1,05,469	3,16,406	34,805
5	3,16,406	2,49,406*	-	82,304

* Short Term Capital Loss

(ii) PV of cash outflow under Borrowing Option

Year	Investment/Salvage	Tax Benefit on Dep./STCL	PVF@8.04%	PV
0	(10,00,000)	-	1.00	(10,00,000)
1	-	82,500	0.925	76,313
2	-	61,875	0.857	53,027
3	-	46,406	0.793	36,800
4	-	34,805	0.734	25,547
5	-	82,304	0.679	55,884

5	67,000	-	0.679	45,493
				(7,06,936)

(iii) PV of cash outflow under Leasing Option

Year	Lease Rental after Tax	PVAF@8.04%	PV
1-5	2,70,000(1-0.33) = (1,80,900)	3.988	(7,21,429)

(a) Since PV of cash outflows is least in case of Borrowing option hence it shall be more advantageous to go for the same.

(b) (i) Sensitivity to Borrowing Rate can be calculated by determining the rate of borrowing (post tax) at which PV of cash flows shall be equal under both options i.e. IRR.

Let us discount the cash flow using discount rate of 10%.

PV of cash outflow under Borrowing Option

Year	Investment/Salvage	Tax Benefit on Dep.	PVF@10%	PV
0	(10,00,000)	-	1.00	(10,00,000)
1	-	82,500	0.909	74,993
2	-	61,875	0.826	51,109
3	-	46,406	0.751	34,851
4	-	34,805	0.683	23,772
5	-	82,304	0.621	51,111
5	67,000	-	0.621	41,607
				(7,22,557)

PV of cash outflow under Leasing Option

Year	Lease Rental after Tax	PVAF@10%	PV
1-5	2,70,000(1-0.33) = (1,80,900)	3.79	(6,85,611)

NPV @ 8.04% = 7,06,936 – 7,21,429 = -14,493

NPV @ 10% = 7,22,557 – 6,85,611 = 36,946

Using IRR Formula:

$$= 8.04 + \frac{-14493}{-14493 - 36946} \times (10 - 8.04)$$

= 8.59%

Sensitivity of Borrowing Rate = $\frac{8.59 - 8.04}{8.59} \times 100 = 6.40\%$

(ii) Sensitivity of Residual Value

Let R be Residual Value at which PV of cash flow shall be equal under both options.

PV of cash outflow under Borrowing Option

Year	Investment/ Salvage	Tax Benefit	PVF@8.04 %	PV
0	(10,00,000)	-	1.00	(10,00,000)
1	-	82,500	0.925	76,313
2	-	61,875	0.857	53,027
3	-	46,406	0.793	36,800
4	-	34,805	0.734	25,547
5	-	(3,16,406-R) 0.33	0.679	70,897 – 0.224R
5	R	-	0.679	0.679 R
				(7,37,416)+0.455R

Accordingly (7,37,416)+0.455R = (7,21,429)

R = 35,136

Sensitivity of Residual Value = $\frac{35,136 - 67,000}{67,000} \times 100 = 47.56\%$

(iii) Sensitivity of Initial Outlay

Let Initial Outlay be I then PV of Cash Outflow under borrowing option shall be:

= I – 2,93,064 and accordingly

I – 2,93,064 = 7,21,429

I = 10,14,493

Sensitivity of Initial Investment = $\frac{1014493 - 1000000}{1000000} \times 100 = 1.4493\%$

Thus from above it is clear that among above sensitivity of Residual Value is the most.

3. Interest and Commission due from Sleepless = ₹ 50 crore (0.10+0.002) = ₹ 5.10 crore

Net Sum Due to Sleepless in each of Scenarios

Scenario 1

Year	PLR	Sum due to Sleepless	Net Sum Due (₹ Crore)		(₹ Crore)
1	10.25	50 (10.25 + 0.8)%= 5.525	5.10 –5.525 = - 0.425	0.909	-0.38633
2	10.5	50 (10.50 + 0.8)%= 5.650	5.10 –5.650 = - 0.550	0.826	-0.4543
3	10.75	50 (10.75 + 0.8)%= 5.775	5.10–5.775 = - 0.675	0.751	-0.50693
4	11	50 (11.00 + 0.8)%= 5.900	5.10 –5.900 = - 0.800	0.683	-0.5464
					-1.89395

Scenario 2

Year	PLR	Sum due to Sleepless	Net Sum Due (₹ Crore)		(₹ Crore)
1	8.75	50 (8.75 + 0.8)%= 4.775	5.10 –4.775 = 0.325	0.909	0.295425
2	8.85	50 (8.85 + 0.8)%= 4.825	5.10 – 4.825 = 0.275	0.826	0.22715
3	8.85	50 (8.85 + 0.8)%= 4.825	5.10 –4.825 = 0.275	0.751	0.206525
4	8.85	50 (8.85 + 0.8)%= 4.825	5.10 –4.825 = 0.275	0.683	0.187825
					0.916925

Scenario 3

Year	PLR	Sum due to Sleepless	Net Sum Due (₹ Crore)		(₹ Crore)
1	7.20	50 (7.20 + 0.8)%= 4.00	5.10–4.00 = 1.10	0.909	0.9999
2	7.40	50 (7.40 + 0.8)%= 4.10	5.10 –4.10 = 1.00	0.826	0.826
3	7.60	50 (7.60 + 0.8)%= 4.20	5.10 –4.20 = 0.90	0.751	0.6759
4	7.70	50 (7.70 + 0.8)%= 4.25	5.10 –4.25 = 0.85	0.683	0.58055
					3.08235

Decision: Since the NPV of the proposal is positive in Scenario 2 (Best Case) and Scenario 3 (Most likely Case) the proposal of swap can be accepted. However, if management of NoBank is of strong opinion that PLR are likely to be more than 10% in the years to come then it can reconsider its decision.

4. **(a)** First of all we shall compute Cost of Capital (Ke) of these companies using CAPM as follows:

$K_{e(A)}$ = 7.00% + (13% -7%)0.95

= 7.00% + 5.70% = 12.7%

$K_{e(B)}$ = 7.00% + (13% -7%)1.42

= 7.00% + 8.52% = 15.52%

$$P_A = \frac{3.50(1.08)}{0.127 - 0.08} = \frac{3.78}{0.047} = ₹80.43$$

$$P_B = \frac{3.50(1.08)}{0.1552 - 0.08} = \frac{3.78}{0.0752} = ₹50.27$$

(b) The valuation of share of B Ltd. is higher because if systematic risk is higher though both have same growth rate.

(c) If the price of share of A Ltd. is ₹74, the share is undervalued and it should be bought. If price of share of B Ltd. is ₹55, it is overvalued and should not be bought.

5. (i) Stock value or conversion value of bond

12 × 20 = ₹ 240

(ii) Percentage of the downside risk

$$\frac{₹\ 265 - ₹\ 235}{₹\ 235} = 0.1277 \text{ or } 12.77\%$$

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

(iii) Conversion Premium

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

$$\frac{₹\ 265 - ₹\ 240}{₹\ 240} \times 100 = 10.42\%$$

(iv) Conversion Parity Price

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

$$\frac{₹\ 265}{20} = ₹\ 13.25$$

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

6. (i) Taxable income = Net Income /(1 – 0.40)

or, Taxable income = ₹ 15,00,000/(1 – 0.40) = ₹ 25,00,000

Again, taxable income = EBIT – Interest

or, EBIT = Taxable Income + Interest

= ₹ 25,00,000 + ₹ 15,00,000 = ₹ 40,00,000

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

= ₹ 40,00,000 (1 – 0.40) – (0.126 ×₹ 1,00,00,000)

= ₹ 24,00,000 – ₹ 12,60,000 = ₹ 11,40,000

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

7. The expected cash inflows of the project are as follows:

Year	*Pr = 0.1*	*Pr = 0.7*	*Pr = 0.2*	*Total*
	₹	₹	₹	₹
1	2,000	21,000	8,000	31,000
2	2,000	21,000	8,000	31,000
3	2,000	21,000	8,000	31,000
4	2,000	21,000	8,000	31,000
5	2,000	21,000	8,000	31,000
5	0	14,000	6,000	20,000

(i) NPV based on expected cash flows would be as follows:

$$=-₹\ 1,00,000+\frac{₹\ 31,000}{(1+0.20)^1}+\frac{₹\ 31,000}{(1+0.20)^2}+\frac{₹\ 31,000}{(1+0.20)^3}+\frac{₹\ 31,000}{(1+0.20)^4}+\frac{₹\ 31,000}{(1+0.20)^5}+\frac{₹\ 20,000}{(1+0.20)^5}$$

= -₹ 1,00,000 + ₹ 25,833.33 + ₹ 21,527.78 + ₹ 17,939.81 + ₹ 14,949.85+ ₹ 12,458.20 + ₹ 8,037.55

NPV = ₹ 746.52

(ii) For the worst case, the cash flows from the cash flow column farthest on the left are used to calculate NPV

$$= -₹\ 100,000 + \frac{₹20,000}{(1+0.20)^1}+\frac{₹20,000}{(1+0.20)^2}+\frac{₹20,000}{(1+0.20)^3}+\frac{₹20,000}{(1+0.20)^4}+\frac{₹20,000}{(1+0.20)^5}$$

= -₹ 100,000 + ₹ 16,666.67+ ₹ 13,888.89 + ₹ 11,574.07 + ₹ 9,645.06+ ₹ 8037.76

NPV = - ₹ 40,187.76

For the best case, the cash flows from the cash flow column farthest on the right are used to calculated NPV

$$= -₹\ 100{,}000 + \frac{₹\ 40{,}000}{(1+0.20)^1} + \frac{₹\ 40{,}000}{(1+0.20)^2} + \frac{₹\ 40{,}000}{(1+0.20)^3} + \frac{₹\ 40{,}000}{(1+0.20)^4} + \frac{₹\ 40{,}000}{(1+0.20)^5} + \frac{₹\ 30{,}000}{(1+0.20)^5}$$

= - ₹ 1,00,000 + ₹ 33,333.33+ ₹ 27,777.78 + ₹ 23,148.15+ ₹ 19,290.12 + ₹ 16,075.10 + ₹ 12,056.33

NPV = ₹ 31,680.81

(iii) If the cash flows are perfectly dependent, then the low cash flow in the first year will mean a low cash flow in every year. Thus the possibility of the worst case occurring is the probability of getting ₹ 20,000 net cash flow in year 1is 10%.

8. Consider one-year Treasury bill.

$$91{,}500 = \frac{1{,}00{,}000}{(1+r_1)}$$

$$1+r_1 = \frac{100{,}000}{91{,}500} = 1.092896$$

$r_1 = 0.0929$ or 0.093 say 9.30%

Consider two-year Government Security

$$98{,}500 = \frac{10{,}000}{1.093} + \frac{1{,}10{,}000}{1.093(1+r_2)}$$

$$98500 = 9149.131 + \frac{1{,}10{,}000}{1.093(1+r_2)}$$

$$\Rightarrow \quad 89350.87 = \frac{100640.4}{1+r_2}$$

$$\Rightarrow \quad 1 + r_2 = \quad 1.126351$$

$$\Rightarrow \quad r_2 = 0.12635$$

$$\Rightarrow \quad r_2 = 0.1263 \text{ say } 12.63\%$$

Consider three-year Government Securities:

$$99{,}000 = \frac{10{,}500}{1.093} + \frac{10{,}500}{1.093 \times 1.1263} + \frac{1{,}10{,}500}{1.093 \times 1.1263(1+r_3)}$$

$$\Rightarrow \quad 99{,}000 = 9{,}606.587 + 8{,}529.33 + \frac{89{,}761.07}{1+r3}$$

$\Rightarrow$ $80,864.083 = \frac{89,761.07}{1+r_3}$

$\Rightarrow$ $1+r_3 = 1.1100240$

$\Rightarrow$ $r_3 = 0.1100240$ say 11.002%

9. **(i)** Current future price of the index = $5000 + 5000\ (0.09-0.06)\ \frac{4}{12} = 5000+ 50= 5,050$

$\therefore$ Price of the future contract = ₹50 x 5,050 = ₹2,52,500

(ii) Hedge ratio = $\frac{1010000}{252500} \times 1.5$ = 6 contracts

Index after three months turns out to be 4500

Future price will be = $4500 + 4500\ (0.09-0.06)\ \times \frac{1}{12} = 4,511.25$

Therefore, Gain from the short futures position is = 6 x (5050 – 4511.25) x 50

= ₹1,61,625

Note: Alternatively we can also use daily compounding (exponential) formula.

10. To decide whether the XY Ltd. should go for the option of demerger i.e. floating two companies for Furniture Manufacturing business and Real Estate we should compare their values.

Working Notes:

(i) Calculation of Discounting Rates

(a) For Furniture Manufacturing

Market Value of Debt (Secured Loan)	₹ 600.00 crore
Market Value of Equity (Rs.118.40 x 50 crore x 55%)	₹ 3256.00 crore
Total	₹ 3856.00 crore

Gearing Levels

Equity	Debt
$\frac{3256.00}{3856.00} = 84.44\%$	$\frac{600.00}{3856.00} = 15.56\%$

Since this level of gearing differs from the gearing level of industry to find out the beta we must re-gear the asset beta taking into account the current structure. Assuming Debt to be risk free let us de-gear the beta as follows:

$$\beta_U = \frac{\beta_L}{[1+(1-T)\,D/E]}$$

Accordingly,

$$\beta_U = \frac{1.30}{[1 + (1 - 0.30)\,30/70]} = 1.00$$

Re-gearing

$\beta_L = \beta_U\ [1+ (1 – T)\ D / E]$

$\beta_L = 1.00\ [1+ (1 – 0.30)\ 15.56/ 84.44] = 1.129$

Cost of Equity using CAPM

K_e = 5.50% + 1.129(14% - 5.50%) =15.10%

Cost of Debt using Short Cut Method

$$k_d = \frac{13(1-0.30) + \frac{(100-131)}{15}}{\frac{100+131}{2}} = 0.0609 \text{ i.e. } 6.09\%$$

WACC of Furniture Manufacturing Division

15.10% x 84.44% + 6.09% x 15.56% = 13.70%

$$\text{Real WACC} = \frac{(1+\text{Nominal Rate})}{(1+\text{Inflation Rate})} - 1 = \frac{(1+0.1370)}{(1+0.03)} - 1 = 10.39 \text{ say } 10\%$$

(b) For Real Estate

Market Value of Debt (Secured Loan)		₹ 655.00 crore
Market Value of Equity	(Rs.118.40 x 50 crore x 45%)	₹ 2,664.00 crore
Total		₹ 3,319.00 crore

Gearing Levels

Equity	Debt
$\frac{2,664.00}{3,319.00} = 80.27\%$	$\frac{655.00}{3,319.00} = 19.73\%$

Since this level of gearing is almost equal to the gearing level of industry the beta of industry shall be the beta of Real Estate Division and Cost of Equity using CAPM will be:

K_e = 5.50% + 0.90(14% - 5.50%) =13.15%

WACC of Real Estate Division

13.15% x 80.27% + 6.09% x 19.73% = 11.76%

$$\text{Real WACC} = \frac{(1+\text{Nominal Rate})}{(1+\text{Inflation Rate})} - 1 = \frac{(1+0.1176)}{(1+0.03)} - 1 = 0.085 \text{ say } 8.5\%$$

(ii) Calculation of Value of Both Division

(a) Furniture Manufacturing

Year	1	2	3	4	5	6 Onwards
Operating Profit before Tax	450	480	500	520	570	600
Allocated HO Overheads	60	60	60	60	60	60
Depreciation	100	80	70	80	80	80
	290	340	370	380	430	460
Less: Tax@30%	87	102	111	114	129	138
	203	238	259	266	301	322
Add: Depreciation	100	80	70	80	80	80
	303	318	329	346	381	402
Less: One Time Cost	80	-	-	-	-	-
	223	318	329	346	381	402
PVF@10%	0.909	0.826	0.751	0.683	0.621	
PV	202.71	262.67	247.08	236.32	236.60	

$$\text{Terminal Value} = \frac{402}{0.10} \times 0.621 = 2496.42$$

Total Value of Furniture Manufacturing Division (Infinite Period)=₹3681.80 crore

Total Value of Furniture Manufacturing Division (15 years)

= ₹1185.38 crore + ₹402 crore x 3.815 = ₹2719.01 crore

(b) Real Estate Business

Year	1	2	3	4	5	6 Onwards
Operating Profit before Tax	320	400	420	440	460	500
Allocated HO Overheads	60	60	60	60	60	60
Depreciation	50	50	50	50	50	50
	210	290	310	330	350	390

Less: Tax@30%	63	87	93	99	105	117
	147	203	217	231	245	273
Add: Depreciation	50	50	50	50	50	50
	197	253	267	281	295	323
Less: One Time Cost	80	-	-	-	-	-
	117	253	267	281	295	323
PVF@8.5%	0.922	0.849	0.783	0.722	0.665	
PV	107.87	214.80	209.06	202.88	196.18	

Terminal Value $= \frac{323}{0.085} \times 0.665 = 2527.00$

Total Value of Furniture Manufacturing Division (Infinite Period)=₹3457.79 crore

Total Value of Furniture Manufacturing Division (15 years)

= ₹930.79 crore + ₹323 crore x 4.364 = ₹2340.36 crore

Summary

Total of two divisions (Infinite Period)

= ₹ 3681.80 crore + ₹ 3457.79 crore – ₹ 1255.00 crore =₹ 5884.59crore

Total of two divisions (15 years horizon)

= ₹ 2719.01 crore + ₹ 2340.36 crore – ₹ 1255.00 crore =₹ 3804.37crore

Current Market Value of Equity

= Rs.118.40 x 50 crore = ₹ 5920.00crore

Decision: Since the total of the two separate divisions with both time horizons (Infinite and 15 years) is less than the Current Value of Equity demerger is not advisable.

11. (a) Expected Return using CAPM

(i) Before Merger

Share of Bull Ltd.	8% + 1.50 (13% - 8%) =	15.50%
Share of Bear Ltd.	8% + 0.60(13% - 8%) =	11.00%

(ii) After Merger

Beta of merged company shall be weighed average of beta of both companies as follows:

$\frac{2}{3} \times 1.50 + \frac{1}{3} \times 0.60 = 1.20$

Thus, expected return shall be:

8% + 1.20 (13% - 8%) = 14%

(b) Impact of merger on Mr. X

After merger his % holding in merged company shall be:

$\frac{2}{3}$ x 4% + $\frac{1}{3}$ x 2% = $3\frac{1}{3}$%

The value of Mr. X's holdings before merger was:

Bull Ltd.	4% x ₹1000 crore	₹40 crore
Bear Ltd.	2% x ₹500 crore	₹10 crore
		₹50 crore

To compute the value of holding of Mr. X, after merger first we have to compute the value of merged entity as follows:

Bull Ltd.	15.50% x ₹ 1000 crore	₹ 155 crore
Bear Ltd.	11% x ₹ 500 crore	₹ 55 crore
Synergy Benefits		₹ 7 crore
		₹ 217 crore

Market Capitalization of Merged Entity = $\frac{₹\ 217\ \text{crore}}{0.14}$ = ₹ 1550 crore

Value of Mr. X's holding = ₹ 51.67 crore. (₹ 1550 crore x $3\frac{1}{3}$%)

12. (i) Sensitivity of each stock with market is given by its beta.

Standard deviation of market Index = 15%

Variance of market Index = 0.0225

Beta of stocks = σ_i r/ σ_m

A = 20 × 0.60/15 = 0.80

B = 18 × 0.95/15 = 1.14

C = 12 × 0.75/15 = 0.60

(ii) Covariance between any 2 stocks = $\beta_1\beta_2\sigma^2_m$

Covariance matrix

Stock/Beta	0.80	1.14	0.60
A	400.000	205.200	108.000

B	205.200	324.000	153.900
C	108.000	153.900	144.000

(iii) Total risk of the equally weighted portfolio (Variance) = $400(1/3)^2 + 324(1/3)^2 + 144(1/3)^2 + 2(205.20)(1/3)^2 + 2(108.0)(1/3)^2 + 2(153.900)(1/3)^2 = 200.244$

(iv) β of equally weighted portfolio $= \beta_p = \sum \beta_i/N = \frac{0.80+1.14+0.60}{3} = 0.8467$

(v) Systematic Risk $\beta_P^2 \sigma_m^2$ $= (0.8467)^2 (15)^2 = 161.302$

Unsystematic Risk = Total Risk – Systematic Risk

= 200.244 – 161.302= 38.942

13. Expected Return on stock A = E (A) $= \sum_{i=G,S,R} P_i A_i$

(G,S&R, denotes Growth, Stagnation and Recession)

(0.40)(25) + 0.30(10) + 0.30(-5) = 11.5%

Expected Return on 'B'

(0.40 × 20) + (0.30 ×15) + 0.30 × (-8) = 10.1%

Expected Return on Market index

(0.40 × 18) + (0.30 ×13) + 0.30× (-3) = 10.2%

Variance of Market index

$(18-10.2)^2 (0.40) + (13-10.2)^2 (0.30) + (-3-10.2)^2 (0.30)$

= 24.34 + 2.35 + 52.27 = 78.96%

Covariance of stock A and Market Index M

Cov. (AM) = $\sum_{i=G,S,R} ([A_i - E(A)] [M_i - E(M)]P$

(25 -11.5) (18 - 10.2)(0.40) + (10 - 11.5) (13 - 10.2) (0.30) + (-5-11.5) (-3-10.2) (0.30)

= 42.12 + (-1.26) + 65.34 =106.20

Covariance of stock B and Market index M

(20-10.1) (18-10.2)(0.40)+(15-10.1)(13-10.2)(0.30) + (-8-10.1)(-3-10.2)(0.30)= 30.89 + 4.12 + 71.67=106.68

Beta for stock A = $\frac{CoV(AM)}{VAR(M)} = \frac{106.20}{78.96} = 1.345$

Beta for Stock B = $\frac{CoV(BM)}{Var(M)} = \frac{106.68}{78.96} = 1.351$

Required Return for A

R (A) = $R_f + \beta (M - R_f)$

11% + 1.345(10.2 – 11) % = 9.924%

Required Return for B

11% + 1.351 (10.2 – 11) % = 9.92%

Alpha for Stock A

E (A) – R (A) i.e. 11.5 % – 9.924% = 1.576%

Alpha for Stock B

E (B) – R (B) i.e. 10.1% - 9.92% = 0.18%

Since stock A and B both have positive Alpha, therefore, they are UNDERPRICED. The investor should make fresh investment in them.

14.

	₹
Issue Price	50,00,000
Less: Interest @ 12.5% for 4 months	2,08,333
Issue Expenses	2,500
Minimum Balance	1,50,000
	46,39,167

Cost of Funds = $\frac{2,10,833(1-0.30)}{46,39,167} \times \frac{12}{4} \times 100 = 9.54\%$

15. Expected Turnover = ₹ 4.80 crore + 25% i.e. ₹ 1.20 crore = ₹ 6.00 crore

	₹ in Lacs	**₹ in Lacs**
Advance to be given:		
Debtors ₹ 6.00 crore x 90/360	150.00	
Less: 10% withholding	15.00	135.00
Less: Commission 2%		3.00
Net payment		132.00
Less: Interest @16% for 90 days on ₹ 132 lacs		5.28
		126.72

Calculation of Average Cost:		
Total Commission ₹ 6.00 crore x 2%		12.00
Total Interest ₹ 5.28 lacs x 360/90		21.12
		33.12
Less: Admin. Cost	6.00	
Saving in Bad Debts (₹ 600 lacs x 1.75% x 80%)	8.40	14.40
		18.72
Effective Cost of Factoring $\frac{₹18.72 \text{ lacs}}{₹126.72 \text{ lacs}} \times 100$		14.77%

16. Working Notes:

Calculation of Cost of Capital

$$k_e = \frac{D_0(1+g)}{P_0} + g$$

D_1 = ₹1.40

P_0 = ₹22.60 – ₹1.40 = ₹21.20

$$k_e = \frac{1.40(1+0.06)}{21.20} + 0.06 = 13\%$$

(a) NPV of the Project

This k_e shall be used to value PV of income stream

$$V = \frac{₹\ 15.30 \text{ crore}}{k_e - g} = \frac{₹\ 15.30 \text{ crore}}{0.13 - 0.04} = ₹170 \text{ crore}$$

PV of Cash Inflows from Expansion Project	₹ 170 crore
Less: PV of Initial Outlay	₹ 150 crore
NPV	₹ 20 crore

Since NPV is positive we should accept the project.

(b) By right issue new number of equity shares to be issued shall be:

50 crore (Existing) + 10 crore(Right Issue) = 60 crore

Market Value of Company = PV of existing earnings + PV of earnings from Expansion

$$= \frac{₹1.40 \times 50 \text{ crore} \times (1 + 0.06)}{0.13 - 0.06} + ₹170 \text{ crore}$$

= ₹ 1060 crore + ₹ 170 crore = ₹ 1230 crore

Price Per Share = ₹ 1230 crore / 60 crore = ₹ 20.50

(c) Let n be the number of new equity shares to be issued then such shares are to be issued at such price that new shareholders should not suffer any immediate loss after subscribing shares. Accordingly,

$$\frac{n}{50\,\text{crore} + n} \times ₹\ 1230\,\text{crore} = ₹\,150\,\text{crore}$$

1230 n = 7500 + 150n

n = 7500/1080 = 6.9444 crore

$$\text{Issue Price Per Share} = \frac{₹\,150\,\text{crore}}{6.9444\,\text{crore}} ₹\ 21.60$$

or

$$\text{Ex - Dividend Price Per Share} = \frac{₹\,1230\,\text{crore}}{56.9444\,\text{crore}} = ₹\ 21.60$$

(d) Benefit from expansion

(i) Right Issue

		₹ Crore
Shareholder's Current Wealth (₹ 22.60 x 50 crore)		1130
Less:	₹ Crore	
Value of 60 crore shares @ ₹ 20.50	1230	
Cash Dividend Received @ ₹ 1.40 per share on 50 crore shares	70	
Cash paid to subscribe Right Shares (₹15 x 10 crore)	(150)	1150
Net Gain		20

or

		₹ Crore
Shareholder's Current Wealth (₹21.20 x 50 crore)		1060
Less:	₹ Crore	
Value of 60 crore shares @ ₹ 20.50	1230	
Cash paid to subscribe Right Shares (₹ 15 x 10 crore)	(150)	1080
Net Gain		20

(ii) Fresh Issue

		₹ Crore
Shareholder's Current Wealth (₹22.60 x 50 crore)		1130
Less:	₹ Crore	
Value of existing 50 crore shares @ ₹21.60	1080	
Cash Dividend Received @ ₹1.40 per share on 50 crore shares	70	1150
Net Gain		20

or

	₹ Crore
Shareholder's Current Wealth (₹21.20 x 50 crore)	1060
Value of existing 50 crore shares @ ₹21.60	1080
Net Gain	20

17. (i) Receipt under three proposals

(a) Invoicing in Sterling

Invoicing in £ will produce = $\frac{€\,4\,\text{million}}{1.1770}$ = £3398471

(b) Use of Forward Contract

Forward Rate = €1.1770+0.0055 = 1.1825

Using Forward Market hedge Sterling receipt would be $\frac{€\,4\,\text{million}}{1.1825}$ = £ 3382664

(c) Use of Future Contract

The equivalent sterling of the order placed based on future price (€1.1760) = $\frac{€\,4.00\,\text{million}}{1.1760}$ = £ 3401360

Number of Contracts = $\frac{£3401360}{62,500}$ =54 Contracts (to the nearest whole number)

Thus, € amount hedged by future contract will be = 54 × £62,500 = £3375000

Buy Future at	€1.1760
Sell Future at	€1.1785
	€0.0025

Total profit on Future Contracts = 54 × £62,500 × €0.0025 =€8438

After 6 months

Amount Received	€ 4000000
Add: Profit on Future Contracts	€ 8438
	€ 4008438

Sterling Receipts

On sale of € at spot = $\frac{€\,4008438}{1.1785}$ = €3401305

(ii) Proposal of option (c) is preferable because the option (a) & (b) produces least receipts**.**

Alternative solution:

Assuming that 6 month forward premium is considered as discount, because generally premium is mentioned in ascending order and discount is mentioned in descending order.

(i) Receipt under three proposals

(a) Invoicing in Sterling

Invoicing in £ will produce = $\frac{€\,4\,million}{1.1770}$ = £3398471

(b) Use of Forward Contract

Forward Rate = €1.1770-0.0055 = 1.1715

Using Forward Market hedge Sterling receipt would be $\frac{€\,4\,million}{1.1715}$ = £ 3414426

(c) Use of Future Contract

The equivalent sterling of the order placed based on future price (€1.1760) = $\frac{€\,4.00\,million}{1.1760}$ = £ 3401360

Number of Contracts = $\frac{£3401360}{62,500}$ =54 Contracts (to the nearest whole number)

Thus, € amount hedged by future contract will be = 54 × £62,500 = £3375000

Buy Future at	€1.1760
Sell Future at	€1.1785
	€0.0025

Total profit on Future Contracts = 54 × £62,500 × €0.0025 =€8438

After 6 months	
Amount Received	€ 4000000
Add: Profit on Future Contracts	€ 8438
	€ 4008438

Sterling Receipts

On sale of € at spot = $\frac{€\,4008438}{1.1785}$ = €3401305

(ii) Proposal of option (b) is preferable because the option (a) & (c) produces least receipts.

18. If foreign exchange risk is hedged

				Total (₹)
Sum due	Yen 78,00,000	US$1,02,300	Euro 95,920	
Unit input price	Yen 650	US$10.23	Euro11.99	
Unit sold	12000	10000	8000	
Variable cost per unit	₹225/-	₹395	₹510	
Variable cost	₹27,00,000	₹39,50,000	₹40,80,000	₹1,07,30,000
Three months forward rate for selling	2.427	0.0216	0.0178	
Rupee value of receipts	₹32,13,844	₹47,36,111	₹53,88,764	₹1,33,38,719
Contribution	₹5,13,844	₹7,86,111	₹13,08,764	₹26,08,719
Average contribution to sale ratio				19.56%
If risk is not hedged				
Rupee value of receipt	₹31,72,021	₹47,44,898	₹53,58,659	₹1,32,75,578
Total contribution				₹25,45,578
Average contribution to sale ratio				19.17%

AKC Ltd. Is advised to hedge its foreign currency exchange risk.

19. Cash Balances: ('000)

Acting independently

	Capital	Interest	₹ in 30 days
India	-5,00,000	-2,666.67	-5,02,667

U.S.	12,500	15.63	5,76,757
U.K.	6,000	18.50	4,01,233
			4,75,323

Cash Balances:

Immediate Cash pooling

	₹('000)
India	–5,00,000
U.S. $\frac{12.50\,\text{Million}}{0.0215}$ =	5,81,395
U.K. $\frac{6.00\,\text{Million}}{0.0149}$ =	4,02,685
	4,84,080

Immediate cash pooling is preferable as it maximizes interest earnings

20. (a) In interbank transactions, foreign exchange is transferred from one account to another account and from one centre to another centre. Therefore, the banks maintain three types of current accounts in order to facilitate quick transfer of funds in different currencies. These accounts are Nostro, Vostro and Loro accounts meaning "our", "your" and "their". A bank's foreign currency account maintained by the bank in a foreign country and in the home currency of that country is known as Nostro Account or "our account with you". For example, An Indian bank's Swiss franc account with a bank in Switzerland. Vostro account is the local currency account maintained by a foreign bank/branch. It is also called "your account with us". For example, Indian rupee account maintained by a bank in Switzerland with a bank in India. The Loro account is an account wherein a bank remits funds in foreign currency to another bank for credit to an account of a third bank.

(b) Salient features of Financial Lease

(i) It is an intermediate term to long-term arrangement.

(ii) During the primary lease period, the lease cannot be cancelled.

(iii) The lease is more or less fully amortized during the primary lease period.

(iv) The costs of maintenance, taxes, insurance etc., are to be incurred by the lessee unless the contract provides otherwise.

(v) The lessee is required to take the risk of obsolescence.

(vi) The lessor is only the Financier and is not interested in the asset.

(c) It implies the process of recording the investments in traded securities (shares, debt-instruments, etc.) at a value, which reflects the market value of securities on

the reporting date. In the context of derivatives trading, the futures contracts are marked to market on periodic (or daily) basis. Marking to market essentially means that at the end of a trading session, all outstanding contracts are repriced at the settlement price of that session. Unlike the forward contracts, the future contracts are repriced every day. Any loss or profit resulting from repricing would be debited or credited to the margin account of the broker. It, therefore, provides an opportunity to calculate the extent of liability on the basis of repricing. Thus, the futures contracts provide better risk management measure as compared to forward contracts.

Suppose on 1st day we take a long position, say at a price of ₹ 100 to be matured on 7th day. Now on 2nd day if the price goes up to ₹ 105, the contract will be repriced at ₹ 105 at the end of the trading session and profit of ₹ 5 will be credited to the account of the buyer. This profit of ₹ 5 may be drawn and thus cash flow also increases. This marking to market will result in three things – one, you will get a cash profit of ₹ 5; second, the existing contract at a price of ₹ 100 would stand cancelled; and third you will receive a new futures contract at ₹ 105. In essence, the marking to market feature implies that the value of the futures contract is set to zero at the end of each trading day.

(d) Relevant Assumptions of CAPM

(i) The investor's objective is to maximize the utility of terminal wealth;

(ii) Investors make choices on the basis of risk and return;

(iii) Investors have identical time horizon;

(iv) Investors have homogeneous expectations of risk and return;

(v) Information is freely and simultaneously available to investors;

(vi) There is risk-free asset, and investor can borrow and lend unlimited amounts at the risk-free rate;

(vii) There are no taxes, transaction costs, restrictions on short rates or other market imperfections;

(viii) Total asset quantity is fixed, and all assets are marketable and divisible.

(e) Exchange Traded Funds (ETFs) were introduced in US in 1993 and came to India around 2002. ETF is a hybrid product that combines the features of an index mutual fund and stock and hence, is also called index shares. These funds are listed on the stock exchanges and their prices are linked to the underlying index. The authorized participants act as market makers for ETFs.

ETF can be bought and sold like any other stock on stock exchange. In other words, they can be bought or sold any time during the market hours at prices that are expected to be closer to the NAV at the end of the day. NAV of an ETF is the value

of the underlying component of the benchmark index held by the ETF plus all accrued dividends less accrued management fees.

There is no paper work involved for investing in an ETF. These can be bought like any other stock by just placing an order with a broker.

Some other important features of ETF are as follows:

1. It gives an investor the benefit of investing in a commodity without physically purchasing the commodity like gold, silver, sugar etc.
2. It is launched by an asset management company or other entity.
3. The investor does not need to physically store the commodity or bear the costs of upkeep which is part of the administrative costs of the fund.
4. An ETF combines the valuation feature of a mutual fund or unit investment trust, which can be bought or sold at the end of each trading day for its net asset value, with the tradability feature of a closed-end fund, which trades throughout the trading day at prices that may be more or less than its net asset value.