CA FINAL

STRATEGIC FINANCIAL MANAGEMENT

SUPER 100 PART 2

Questions

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Question 26.

Mercury Cine Film Equipments (P) Ltd. imported computer lab equipment and accessories at a cost of JPY 50 million from M/s SONY of Japan on January 01, 2002, and the amount is payable on June 30, 2002.

The firm approaches a bank in Mumbai, which informed him that no forward quotation is available for JPY in the Indian market and the bank has to quote a rate based on the 6 month Rs./$ forward in the Mumbai market and 6 month JPY/$ forward in the Singapore market. The exchange rates quoted to the firm on January 01, 2002 at Mumbai and Singapore markets are as follows:

Mumbai	Rs/$ spot	: 48.55/80
	6 months forward	: 50/60
Singapore	JPY/$ spot	: 124.50/125.00
	6 months forward	: 4.00/4.50

The treasurer of the firm believes that the forward market is over-estimating the weakness of rupee against dollar. So instead of going to the Mumbai bank for forward selling of JPY, it is planning to buy JPY 6 month forward in Singapore market against dollar to settle the payable, and buy US $ against rupee after 6 months in the Mumbai spot market to deliver US $ against JPY in the Singapore.

If the Rs./$ spot exchange rate on June 30, 2002 in Mumbai turns out as 48.95/20.

You are required to calculate the saving the firm can make from the strategy instead of buying JPY from the Mumbai bank.

Question 27.

The Digital Electronics System Corporation (DESC) pays no cash dividends currently and is not expected to for the next five years. Its latest (current) EPS was €10, all of which was reinvested in the company. The firm's expected ROE for the next five years is expected to be 20% per year and during this time it is also expected to continue to reinvest all of its earnings. It is expected that starting six years from now the DESC's ROE on new investments is expected to fall to 15% and it is expected that the corporation shall start paying out 40% of its earnings in form of cash dividends, which it will continue to do forever after. DESC's market capitalization rate is 15% per year.

a. Using DDM model, what is the value of DESC's share today?

b. Now suppose that the current market price of share it equal to as computed in (a) above, then what do you expect to happen to its price over the next year? The year after?

c. If you are expecting that DESC to out only 20% of earning then what is the price per share at the end of year 5.

Question 28.

Consider a firm which is present in 3 industries –X, Y and Z. The firm has 20 crores shares outstanding. The following details are given :

Particulars	X	Y	Z
Industry sales projected	5000 cr	15000 cr	20000 cr
Market share of the firm	20%	10%	15%
Net profit margin of the firm	18%	15%	25%

Use R_e = 16.24%

i. Calculate the intrinsic value of the share if the firm has a 100% payout ratio.

ii. The firm follows a constant payout ratio of 70%. Its return on equity (ROE) is expected to be Case I - 20%, Case II - 16.24%, Case III - 12%.

Find the intrinsic value of the share and comment.

Question 29.

A US Institutional Investor decided to invest in a Indian security of b = 1.20 and standard deviation 15%. The return on the market portfolio is 15% and risk-free rate is 8% in India. Indian rupee in expected to depreciate by 4% in the next one year.

You are required to calculate expected return in dollar if the FII holds the investment for one year.

Question 30.

Mr. Pranoy has recently purchased 100 shares of Super Tools Ltd. at Rs.300 per share. The volatility of the stock is 15% per annum. Mr. Pranoy has decided to hold the shares for 6 months. The 6-month European call option on the shares of Super Tools Ltd. is available at Rs.28 per share. The contract size for the option is 100 shares and the delta of call option is 0.35.

You are required to calculate for 90% confidence level

a. Daily VaR for long stock position

b. Daily VaR for long call option position

(Assume 250 trading days in a year).

Question 31.

BRS Inc deals in computer and IT hardwares and peripherals. The expected revenue for the next 8 years is as follows:

Years	Sales Revenue ($ Million)
1	8
2	10
3	15
4	22
5	30
6	26
7	23
8	20

Summarized financial position as on 31 March 2012 was as follows:

Liabilities	Amount	Assets	Amount
Equity Stocks	12	Fixed Assets (Net)	17
12% Bonds	8	Current Assets	3
	20		20

Additional Information:

i. Its variable expenses is 40% of sales revenue and fixed operating expenses (cash) are estimated to be as follows:

Period	Amount ($ Million)
1- 4 years	1.6
5-8 years	2

ii. An additional advertisement and sales promotion campaign shall be launched requiring expenditure as per following details:

Period	Amount ($ Million)
1 year	0.50
2-3 years	1.50
4-6 years	3.00
7-8 years	1.00

iii. Fixed assets are subject to depreciation at 15% as per WDV method.

iv. The company has planned additional capital expenditures (in the beginning of each year) for the coming 8 years as follows:

Period	Amount ($ Million)
1	0.50
2	0.80
3	2.00
4	2.50
5	3.50
6	2.50
7	1.50
8	1.00

v. Investment in Working Capital is estimated to be 20% of Revenue.

vi. Applicable tax rate for the company is 30%.

vii. Cost of Equity is estimated to be 16%.

viii. The Free Cash Flow of the firm is expected to grow at 5% per annuam after 8 years.

With above information you are require to determine the:

i. Value of Firm

ii. Value of Equity

Question 32.

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 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

Question 33.

The following information is taken from the books of a bank relating to an interest rate swap

Remaining term to maturity	3 years
Fixed rate paid by bank	10%
Floating rate received by bank	6m Libor
Current 6m Libor	9%
Market quote for 3 year swap	10.5% semi-annual vs. Libor

Find out the value of the swap, if the bank has received the latest interest payment.

Question 34.

Mr. Binoy has invested Rs.50,000 each in the stocks of Alpha and Beta. The variance of stocks of Alpha and Beta are 18(%)^2 and 30(%)^2 per annum respectively. The correlation of returns from the two stocks is 0.40.

You are required to

a. Find out the variance of the portfolio.

b. Find out the benefit of diversification.

c. Find out the benefit of diversification if the correlation of return between the two stocks is – 1.

d. Calculate the Value at Risk (VaR) of the portfolio for the correlation of 0.40 at 95% confidence level.

   (Assume 250 trading days in a year)

Question 35.

Three companies X, Y and Z have come together to reduce their interest cost. Following are the requirement of those companies and interest rates offered to them in different markets:

Company	Requirement	Fixed $	Floating $	Fixed Euro
X	Fixed $ funds	5.75%	LIBOR + 0.90%	6.00%
Y	Floating $ funds	5.25%	LIBOR + 0.75%	6.50%
Z	Fixed Euro Funds	6.00%	LIBOR + 0.60%	6.25%

The amounts required by the companies are equal and are for three years on bullet payment basis.

You are required to arrange a swap between three parties in such a way so that the benefit of swap is equally divided among the three companies.

Question 36.

On February 15, 2002 the following prices are observed on the IMM and the interbank foreign exchange market:

	$/Euro	$/Yen
Spot	0.8666	0.0076
Futures:		
March	0.8738	0.0075
June	0.8800	0.0074
September	0.8860	0.0073

A speculator is looking at the above prices and arrived at the conclusion that in long-term Euro will move against Yen in the opposite direction of what cross-market quotes are implying. So he is planning to adopt some spread strategies to profit from this view.

You are required to

a. Find the market long-term view of euro's prospect against yen.

b. Explain what spread strategy the speculator will adopt to profit from his view.

c. If in May, the futures prices are turned out as

June	$/Euro	$/Yen
June	0.8805	0.00735
September	0.8836	0.00745

Calculate the profit/loss of the speculator.

Question 37.

The following options are quoted at the market:

Option	Expiration	Strike price	Premium
Call	1 month	Rs.48.50/$	Rs.0.30
Put	1 month	Rs.48.50/$	Rs.0.05

A trader is looking at the above options and planning to adopt long strip or long strap strategy to make profit from the rupee – dollar exchange rate volatility.

You are required to

a. Show the pay-off profile and indicate break-even points for strip and strap strategies in a price range of Rs.47 – Rs.50 for a dollar.

b. Comment on the desirability of the above two option strategies.

Question 38.

The current stock price of Telesoftek Ltd. is quoting at Rs.75. The standard deviation of continuously compounded annual rate of return from the stock is 25%. The risk-free rate in the economy is 8%.

You are required to

a. Calculate the value of a call option with strike price Rs.100 and time to expiration 6 months using Black Schole's option valuation model.

b. Calculate the value of a put option with strike price Rs.100 and time to expiration 6 months.

Question 39.

Current rupee-dollar exchange rate is Rs.47.95/$. The following 3 months European options are quoted at the market:

Strike price	Premium		Maturity
	Call	Put	
Rs.48.00/$	Rs.0.60	Rs.0.02	3 months
Rs.48.50/$	Rs.0.12	Rs.0.25	3 months

A speculator is expecting a fairly strong depreciation of rupee against dollar over the next three months period. The speculator is trying to make profit from this view by trading in the above two call options.

You are required to

a. Suggest an appropriate option strategy (using only call options) to the speculator to make profit from the forecast explaining the reason for the same.

b. Give the pay-off profile and draw the pay-off diagram indicating break-even rate(s), maximum possible profit and loss from the same strategy.

c. If the speculator is not sure of the direction of fluctuations of the exchange rates, what other option strategies he/she can adopt.

Question 40.

Monte Carlo Garments Ltd., a large export house from India entered into a five-year interest rate swap with the State Bank of India, under which it has contracted to pay 10% and receive six-month LIBOR semi- annually, on a notional principal amount of US $ 10 million. This deal was set-up on July 1, 1999. On July 1, 2001, after the swap payments were settled, the Finance Manager suggested that the swap be cancelled as the rates in the market have dropped considerably. He approached the bank, which agreed to cancel the deal at 8%, which is also the current rate for the 3 years swap deal for fixed vs LIBOR.

You are required to find out the following:

a. If the deal was to be cancelled on July 1, 2001, what amount of money would be required to be paid? By whom?

b. Instead of canceling the existing deal, if a new deal was made and allowed to run for 3 years (till the maturity of the original deal), what would be the cash-flow on the fixed leg of the new deal? (Assume that each period is exactly 6 months).

Question 41.

The price of Silver was $ 7.511 per ounce in the New York market on April 27, 2001. At the close of trading on the same day, the settlement price of December 2001 silver futures contracts was $ 8.456. The annualized borrowing rate on April 27, 2001 was about 11% on the Eurodollar rates. The cost of storing gold is negligible, as the quantity stored is very small.

You are required to calculate the following:

a. The cost-of-carry price relationship between the cash price of silver and the futures price of silver.

b. Show how an arbitrage gain can be made with the conclusion derived by you in (a) above.

Question 42.

A firm in Brussels exports diamonds after cutting and polishing. On September 15, an order worth $ 20 million to a US customer is shipped. The payment is due 3 months from that date. The spot BeFr/$ is 44.9757 and the 3 month forward rate is 44.8531.

The firm is considering to hedge its exposure by taking position in futures of either Deustche Mark or Swiss Franc on IMM as both the currencies are closely related to BeFr.

The spot DM/$ rate is 2.1692 and December DM futures are trading at $0.4623. The spot CHF/$ rate is 1.6451 and December CHF futures are trading at $0.6253.

On December 15, 2001, $ is priced in the spot market as at DM 2.1557, CHF 1.6369 and BeFr 44.5745. In the futures market December DM future is priced $ 0.4642 and December CHF future is priced $ 0.6284.

You are required to compute the firm's gains and losses in both the hedging strategies.

(Standard size of DM and CHF futures are 125,000 each).

Question 43.

On June 05, 2002 you bought 5 gold futures at a price of $ 297.50 per ounce. The size of gold futures is 100 ounce per contract, initial margin is $ 2000 per contract and maintenance margin is $1500 per contract.

Closing prices of gold futures for 10 trading days are:

Date	Closing price
June 05	$ 298.20
June 06	$ 297.10
June 07	$ 294.40
June 10	$ 293.90
June 11	$ 292.70
June 12	$ 287.00
June 13	$ 287.00
June 14	$ 287.80
June 17	$ 288.50
June 18	$ 289.10

On June 19, 2002 you square-off the position at a price of $289.70.

You are required to prepare the margin account showing all the cash flows and calculate profit/loss after squaring-off the contract. (You can assume any amount above the initial margin will be withdrawn).

Question 44.

An Indian ready-made wear manufacturer exported goods worth $10 million to US. The payment for the exports will be received after three months. Current rupee-dollar exchange rate is Rs.49/$. Due to the fluctuating rupee-dollar exchange rate the company is planning to hedge the foreign exchange exposure through options market.

Following European option on dollar of maturity three months are available at the market.

Strike Price (Rs.)	Option	Premium (Rs.)
50	Call	0.20
50	Put	0.50

The company is considering the following three alternatives for hedging the receivable:

i. Writing a call option.

ii. Buying a put option

iii. Writing a call and buying a put together.

iv. You are required to show the pay-off profile of all the three alternatives for a price range of Rs.49 – Rs.51 and suggest about the best alternative of hedging.

Question 45.

A company's stock is currently traded at the market at Rs.80. A two year American call option on the company's stock with strike price of Rs.75 is available at the market. The price of the stock in the two years time either move up or down by 10% in each year. The risk-free interest rate is 8%.

You are required to use Two-step Binomial Model to find out the price of the two year American call option on the company's stock.

Question 46.

A Japanese firm had swapped ¥ 100 million fixed rate liability into $ 0.9091 million floating rate liability when the exchange rate was ¥/$ 110. At that time fixed ¥ vs. 6 month dollar LIBOR swap rate was 3%. The interest payments on both fixed and floating rates are semi-annual. The swap presently has a remaining maturity of 4 year 9 months. The present yen-dollar exchange rate is ¥/$ 120 and current 5 year fixed ¥ vs. 6 month dollar LIBOR swap is 2%. The present 6 month LIBOR set three months back is 6%, while current 3 month LIBOR is 5%.

You are required to find the value of the swap to the Japanese firm.

Question 47.

Mr. Adarsh Srivastava is a recently passed CFA and is working with Money Managers Ltd. at Mumbai. He is aware of the mechanical portfolio management techniques and wants to test one of the techniques on an equity fund he has constructed and compare the gains and losses from the technique with those from a passive buy and hold strategy. The fund consists of equities only and the ending NAVs of the fund he constructed for the last 10 months are given below:

Month	Ending NAV (Rs./unit)	Month	Ending NAV (Rs./unit)
December 2000	40.00	May 2001	37.00
January 2001	25.00	June 2001	42.00
February 2001	36.00	July 2001	43.00
March 2001	32.00	August 2001	50.00
April 2001	38.00	September 2001	52.00

Assume Adarsh had invested a notional amount of Rs.20 lakhs equally in the equity fund and a conservative portfolio (of bonds) in the beginning of December 2000 and the total portfolio was being rebalanced each time the NAV of the fund increased or decreased by 15%.

You are required to determine the value of the portfolio for each level of NAV following the Constant Ratio Plan.

Question 48.

The stock options on ACC shares are presently trading as under:

Instrument	Expiry date	Strike price (Rs.)	Option premium (Rs.)	Available in multiple of
Call option	08.11.2001	100	8	1500
Call option	08.11.2001	110	3	1500
Call option	22.11.2001	110	8	1500
Put option	08.11.2001	100	4	1500
Put option	08.11.2001	110	9	1500
Put option	22.11.2001	120	20	1500

Current market price of an ACC share is Rs.110.

Considering expiration day stock prices may take any value from Rs.80 to Rs.140, you are required to

a. Show the pay off table and diagram for the strategy an investor should follow if he thinks that

   i. The stock is risky but does not know which way the price will move and assigns equal probability for upward and downward change.

   ii. The stock is risky but probability of a price falling is greater than the probability of a price rise.

b. Calculate the break-even price (i.e. where the net cash flow is zero) and the maximum loss from the above two strategies.

Question 49.

Mr. Ashok Tiwari is an investment officer of a Rs.120 crore pension fund. He is concerned of the recent downward spiral of the interest and the recession in the economy. There are some investible funds which Mr.Tiwari has kept in near cash and hence his returns may be affected. He has to earn a minimum hurdle rate and hence, he is currently evaluating two bonds, the details of which are as follows:

	Bond I	Bond II
Maturity	5 years	5 years
Coupon	13% P.a.	11% P.a.
Feature	Callable	Non-Callable
Call date	2 years from the date of issue	-
Issue price	Rs.120	Rs.110
Face value	Rs.100	Rs.100
Periodicity of interest payment	Annually	Semi-annually
Call price	Rs.110	-

a. Calculate the

   i. Duration of both the bonds

   ii. Yield to call for the both the bonds

   iii. Duration to call of bond I.

b. Calculate the effect on the price of both the bonds for a 50 basis points increase in the market interest rates.

Question 50.

Following are the number of swaps:

Swap	Action	Rating	Bond	Coupon	Maturity	Call price (Rs.)	Market price (Rs.)	YTM
I	Sell	Baa	A	11.625%	Due 2010	108.2	75	15.7
	Buy	Baa	A	7.625%	Due 2011	105.2	51	15.4
II	Sell	Aaa	B	13.250%	Due 2002	101.5	96	14.0
	Buy	-	Govt. Bonds	14.250%	Due 2002	None	102	13.8
III	Sell	Aa	C	0.00%	Due 2003	None	25	14.4
	Buy	Aa	C	Floating	Due 2019	103.9	90	-
IV	Sell	A	D	8.25%	Due 2007	105.8	60	15.1
	Buy	-	Govt. Bonds	8.25%	Due 2015	None	66	13.0
V	Sell	A	E*	6.00%	Due 2009	103.9	62	10.8
	Buy	A	F	11.75%	Due 2015	109.9	73	16.3

* Convertible bond

a. Identify the reason(s) investors may have made in each swap.

b. How do you account for the difference in the yield-to-maturity of the two 'A' bonds in swap I?