

CA FINAL SFM

SUPER 60 QUESTIONS

For November 2023

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Mergers & Acquisitions

(a) Long Ltd., is planning to acquire Tall Ltd., with the following data available for both the companies:

	Long Ltd.	Tall Ltd.
Expected EPS	Rs. 12	Rs. 5
Expected DPS	Rs. 10	Rs. 3
No. of Shares	30,00,000	18,00,000
Current Market Price of Share	Rs. 180	Rs. 50

As per an estimate Tall Ltd., is expected to have steady growth of earnings and dividends to the tune of 6% per annum. However, under the new management the growth rate is likely to be enhanced to 8% per annum without additional investment.

You are required to:

- Calculate the net cost of acquisition by Long Ltd., if Rs. 60 is paid for each share of Tall Ltd.
- If the agreed exchange ratio is one share of Long Ltd., for every three shares of Tall Ltd., in lieu of the cash acquisition as per (i) above, what will be the net cost of acquisition?
- Calculate Gain from acquisition.

(b) ABC Ltd. is a company operating in the software industry. It is considering the acquisition of XYZ Ltd. which is also into software industry. The following information are available for the companies:

	ABC Ltd.	XYZ Ltd.
Earnings after tax (Rs.)	9,00,000	2,40,000
Number of equity shares	1,50,000	60,000
P/E ratio (no. of times)	14	10

ABC Ltd. is planning to offer a premium of 25% over the market price of XYZ Ltd. Required:

- What is the swap ratio based on current market price?
- Find the number of shares to be issued by ABC Ltd. to the shareholders of XYZ Ltd.
- Compute the new EPS of ABC Ltd. after merger and comment on the impact of merger.
- Determine the market price of the share when P/E ratio remains unchanged.
- Compute the market price when P/E declines to 12 and comment on the results. Figures are to be rounded off to 2 decimals.

(c) The following information relating to the acquiring Company Abhiman Ltd. and the target Company Abhishek Ltd. are available. Both the Companies are promoted by Multinational Company, Trident Ltd. The promoter's holding is 50% and 60% respectively in Abhiman Ltd. and Abhishek Ltd.:

	Abhiman Ltd.	Abhishek Ltd.
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Share Capital (Rs.)	200 lakh	100 lakh
Free Reserve and Surplus (Rs.)	800 lakh	500 lakh
Paid up Value per share (Rs.)	100	10
Free float Market Capitalisation (Rs.)	400 lakh	128 lakh
P/E Ratio (times)	10	4

Trident Ltd. is interested to do justice to the shareholders of both the Companies. For the swap ratio weights are assigned to different parameters by the Board of Directors as follows:

Book Value	25%
EPS (Earning per share)	50%
Market Price	25%

- (a) What is the swap ratio based on above weights?
- (b) What is the Book Value, EPS and expected Market price of Abhiman Ltd. after acquisition of Abhishek Ltd. (assuming P.E. ratio of Abhiman Ltd. remains unchanged and all assets and liabilities of Abhishek Ltd. are taken over at book value).
- (c) Calculate:
- Promoter's revised holding in the Abhiman Ltd.
 - Free float market capitalization.
 - Also calculate No. of Shares, Earning per Share (EPS) and Book Value (B.V.), if after acquisition of Abhishek Ltd., Abhiman Ltd. decided to :
 - Issue Bonus shares in the ratio of 1 : 2; and
 - Split the stock (share) as Rs. 5 each fully paid.
- (d) AFC Ltd. wishes to acquire BCD Ltd. The shares issued by the two companies are 10,00,000 and 5,00,000 respectively:
- Calculate the increase in the total value of BCD Ltd. resulting from the acquisition on the basis of the following conditions:

Current expected growth rate of BCD Ltd.	7%
Expected growth rate under control of AFC Ltd., (without any additional capital investment and without any change in risk of operations)	8%
Current Market price per share of AFC Ltd.	Rs. 100
Current Market price per share of BCD Ltd.	Rs. 20
Expected Dividend per share of BCD Ltd.	Rs. 0.60
 - On the basis of aforesaid conditions calculate the gain or loss to shareholders of both the companies, if AFC Ltd. were to offer one of its shares for every four shares of BCD Ltd.
 - Calculate the gain to the shareholders of both the Companies, if AFC Ltd. pays Rs. 22 for each share of BCD Ltd., assuming the P/E Ratio of AFC Ltd. does not change after the merger. EPS of AFC Ltd. is Rs. 8 and that of BCD is Rs. 2.50. It is assumed that AFC Ltd. invests its cash to earn 10%.

(e) The following are the financial statements of A Ltd., and B Ltd. for the financial year ended 31st March, 2020. Both the companies are working in the same industry.

Balance Sheets (Rs.)

Particulars	A Ltd.	B Ltd.
Total Current Assets	15,00,000	12,00,000
Total Net Fixed Assets	12,00,000	6,00,000
Total Assets	27,00,000	18,00,000
Equity Capital (Face Value Rs. 10)	10,00,000	8,00,000
Retained Earnings	3,00,000	---
14% Long Term Debt	7,00,000	5,00,000
Total Current Liabilities	7,00,000	5,00,000
Total Liabilities	27,00,000	18,00,000

Income Statement (Rs.)

Particulars	A Ltd.	B Ltd.
Net Sales	33,10,000	16,60,000
Gross Profit	6,90,000	3,40,000
Operating Expenses	2,00,000	1,00,000
Interest	98,000	70,000
EBT	3,92,000	1,70,000
Tax @ 30%	1,17,600	51,000
PAT	2,74,400	1,19,000
Additional information :		
Dividend Pay-out Ratio	40%	60%
Market Price per Share	40	15

You are required to calculate:

- (i) Earnings Per share (EPS), Profit Earning Ratio (PER), Return on Equity (ROE) and Book Value Per Share (BVPS) for both the firms.
- (ii) Estimate future EPS growth rate for both the firms.
- (iii) If on acquisition of B Ltd. by A Ltd., intrinsic value of B Ltd., will be ` 20 per share, develop range of justifiable Exchange Ratio (ER) that can be offered by A Ltd., to shareholders of B Ltd.
- (iv) Based on your analysis in (i) and (ii) whether the negotiated ratio will be close to upper or lower range. Justify.
- (v) Post-merger EPS on an ER of 0.4: 1. What will be immediate accretion or dilution to EPS to the shareholders of both the firms?
- (vi) Post-Merger MPS on the basis of ER of 0.4 : 1

Mutual Fund

(a) The following particulars relating to S Fund Schemes:

Particulars	Value Rs. in Crores
1. Investment in Shares (at cost)	
a. Pharmaceuticals companies	158
b. Construction Industries	62
c. Service Sector Companies	112
d. IT Companies	68
e. Real Estate Companies	20
2. Investment in Bonds (Fixed Income)	
a. Listed Bonds (8000, 14% Bonds of Rs. 15,000 each)	24
b. Unlisted Bonds	14
3. No. of Units outstanding (crores)	8.4
4. Expenses Payable	7
5. Cash and Cash equivalents	3
6. Market expectations on listed bonds	8.842%

The fund has incurred the following expenses:

Consultancy and Management fees Rs. 520 Lakhs

Office Expenses Rs. 180 Lakhs

Advertisement Expenses Rs. 48 Lakhs

Particulars relating to each sector are as follows:

Sector	Index on Purchase date	Index on Valuation date
Pharmaceutical companies	300	500
Construction Industries	275	490
Service Sector Companies	285	500
IT Companies	270	515
Real Estate Companies	265	440

Required:

- Calculate the Net Asset Value of the fund
- Calculate the Net Asset Value per unit
- Determine the Net return (Annualized), if the period of consideration is 4 years, and the fund has distributed Rs. 2 per unit per year as cash dividend during the same period.

Note: Calculate figure in Rs. Crore upto 3 decimal points.

(b) On 1st April, an open ended scheme of mutual fund had 400 lakh units outstanding with Net Assets Value (NAV) of Rs.19. At the end of April, it issued 5 lakh units at an opening NAV plus 2% load, adjusted for dividend equalization. At the end of May, 4 Lakh units were repurchased at the opening NAV less 2% exit load adjusted for dividend equalization. At the end of June, 60% of its available income was distributed.

In respect of April-June quarter, the following additional information is available:

Particulars	Rs. in Lakhs
Portfolio value appreciation	515.67
Income of April	31.960
Income of May	46.125
Income for June	58.470

You are required to calculate:

- (i) Income available for distribution;
- (ii) Issue price at the end of April;
- (iii) Repurchase price at the end of May; and
- (iv) Net Asset Value (NAV) as on 30th June.

(c) Mr. Y has invested in the three mutual funds (MF) as per the following details:

Particulars	MF 'X'	MF 'Y'	MF 'Z'
Amount of Investment (Rs.)	2,00,000	4,00,000	2,00,000
Net Assets Value (NAV) at the time of purchase (Rs.)	10.30	10.10	10
Dividend Received up to 31.03.2018 (Rs.)	6,000	0	5,000
NAV as on 31.03.2018 (Rs.)	10.25	10	10.20
Effective Yield per annum as on 31.03.2018 (percent)	9.66	-11.66	24.15

Assume 1 Year = 365 days

Mr. Y has misplaced the documents of his investment. Help him in finding the date of his original investment after ascertaining the following:

- (i) Number of units in each scheme;
- (ii) Total NAV;
- (iii) Total Yield; and
- (iv) Number of days investment held

(d) On 01-07-2016, Mr. X Invested Rs. 50,000/- at initial offer in Mutual Funds at a face value of Rs. 10 each per unit. On 31-03-2017, a dividend was paid @ 10% and annualized yield was 120%. On 31-03-2018, 20% dividend and capital gain of Rs. 0.60 per unit was given. Mr. X redeemed all his 6271.98 units when his annualized yield was 71.50% over the period of holding. Calculate NAV as on 31-03-2017, 31-03-2018 and 31-03-2019.

For calculations consider a year of 12 months.

(e) Cinderella Mutual Fund, an approved mutual fund, sponsored open-ended equity oriented scheme "Rudolf Opportunity Fund". There are three plans under the scheme viz. 'A' - Dividend Re-investment plan, 'B' - Bonus plan and 'C' - Growth plan.

At the time of initial public offer on 1-4-2009, Mr. Amit, Mr. Ashish and Mr. Arun, three investors invested Rs. 2,00,000 each at face value of Rs. 10 per unit and chosen plan 'B', 'C' and 'A' respectively.

The particulars of the fund over the period are as follows:

Date	Dividend %	Bonus Ratio	Net Asset Value per unit (Rs.)		
			Plan A	Plan B	Plan C
31.07.2013	10	-	30.70	31.20	35.40
31.03.2014	35	5:4	58.42	31.05	58.25
30.10.2017	20	-	42.18	26.45	56.45
15.03.2018	12.50	-	46.45	27.72	62.78
31.03.2018	-	1:3	45.20	20.05	67.12
25.03.2019	20	1:4	48.10	19.95	71.42
31.07.2019	-	-	53.75	22.98	82.07

On 31st July, 2019, all the three investors redeemed all the balance units.

1. Consider the following:

- Long-term capital gain is exempt from Income-tax.
- Short-term capital gain is subject to 10% Income-tax.
- Security Transaction Tax is 0.2% only on sale/ redemption of units.
- Ignore Education Cess.

2. You are required:

- To calculate the Effective Yield per annum (annual rate of return) of each of the investors.
- To suggest the name of investor with the highest Effective Yield per annum with the difference to his nearest investor.

(Show your calculations up to two decimal points)

Portfolio Management

(a) The returns of a portfolio A and market portfolio for the last 12 months are indicated as follows:

Month	Portfolio A	Market Portfolio
January	- 0.52	0.82
February	2.20	0.04
March	2.17	2.80
April	4.17	1.72
May	2.04	0.27
June	3.00	0.39
July	1.99	1.95
August	4.00	0.64
September	-1.38	1.53
October	2.67	2.70
November	3.99	2.52
December	1.86	2.09
Standard Deviation (σ)	1.6223	0.9498

(i) You are required to find out the monthly returns attributable to the sheer skill of the Portfolio Manager.

(ii) What part of the monthly return is attributable to the higher risk assumed by the Portfolio Manager?

Assume that the risk-free rate of return is 12% per annum and the portfolio is fully diversified.

(b) X Co., Ltd., invested on 1.4.2009 in certain equity shares as below:

Name of Co.	No. of shares	Cost (Rs.)
M Ltd.	1,000 (Rs. 100 each)	2,00,000
N Ltd.	500 (Rs. 10 each)	1,50,000

In September, 2009, 10% dividend was paid out by M Ltd. and in October, 2009, 30% dividend paid out by N Ltd. On 31.3.2010 market quotations showed a value of Rs. 220 and Rs. 290 per share for M Ltd. and N Ltd. respectively.

On 1.4.2010, investment advisors indicate (a) that the dividends from M Ltd. and N Ltd. for the year ending 31.3.2011 are likely to be 20% and 35%, respectively and (b) that the probabilities of market quotations on 31.3.2011 are as below:

Probability factor	Price/share of M Ltd.	Price/share of N Ltd.
0.2	220	290
0.5	250	310
0.3	280	330

You are required to:

- Calculate the average return from the portfolio for the year ended 31.3.2010;
- Calculate the expected average return from the portfolio for the year 2010 -11; and

- (iii) Advise X Co. Ltd., of the comparative risk in the two investments by calculating the standard deviation in each case.

(c) Suppose that economy A is growing rapidly and you are managing a global equity fund and so far you have invested only in developed-country stocks only. Now you have decided to add stocks of economy A to your portfolio. The table below shows the expected rates of return, standard deviations, and correlation coefficients (all estimates are for aggregate stock market of developed countries and stock market of Economy A).

	Developed Country Stocks	Stocks of Economy A
Expected rate of return (annualized percentage)	10	15
Risk [Annualized Standard Deviation (%)]	16	30
Correlation Coefficient (r)	0.30	

Assuming the risk-free interest rate to be 3%, you are required to determine:

- What percentage of your portfolio should you allocate to stocks of Economy A if you want to increase the expected rate of return on your portfolio by 0.5%?
- What will be the standard deviation of your portfolio assuming that stocks of Economy A are included in the portfolio as calculated above?
- Also show how well the Fund will be compensated for the risk undertaken due to inclusion of stocks of Economy A in the portfolio?
- Construct the minimum risk portfolio combining developed country stocks and stocks of economy A.

(d) Ramesh has identified stocks of two companies A and B having good investment potential: Following data is available for these stocks:

Year	A (Market Price per Share in Rs.)	B (Market Price per Share in Rs.)
2013	19.60	8.70
2014	18.75	12.80
2015	33.42	16.20
2016	42.64	18.25
2017	43.25	15.60
2018	44.60	13.25
2019	34.75	18.60

You are required to calculate:

- The Risk and Return by investing in Stock A and B
- The Risk and Return by investing in a portfolio of these Stocks if he invests in Stock A and B in proportion of 3 : 2.
- The better opportunity for investment

(e) Mr. X owns a portfolio with the following characteristics:

	Security	Security	Risk Free
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	A	B	security
Factor 1 sensitivity	0.80	1.50	0
Factor 2 sensitivity	0.60	1.20	0
Expected Return	15%	20%	10%

It is assumed that security returns are generated by a two factor model.

- (i) If Mr. X has Rs. 1,00,000 to invest and sells short Rs. 50,000 of security B and purchases Rs. 1,50,000 of security A what is the sensitivity of Mr. X's portfolio to the two factors?
- (ii) If Mr. X borrows Rs. 1,00,000 at the risk free rate and invests the amount he borrows along with the original amount of Rs. 1,00,000 in security A and B in the same proportion as described in part (i), what is the sensitivity of the portfolio to the two factors?
- (iii) What is the expected return premium of factor 2?

(f) Sonia has a fund of Rs. 5 lakhs which she wants to invest in share market with rebalancing target after every 10 days to start with for a period of one month from now. The present NIFTY is 18,154. The minimum NIFTY within a month can at most be 16,338.6. She wants to know as to how she should rebalance her portfolio under the following situations, according to the theory of Constant Proportion Portfolio Insurance Policy, using "2" as the multiplier.

- (i) Immediately to start with.
- (ii) 10 days later - being the 1st day of rebalancing if NIFTY falls to 17,460.25
- (iii) 10 days further from the above date if the NIFTY touches 18,881.06

For the sake of simplicity, assume that the value of her equity component will change in tandem with that of the NIFTY and the risk free securities in which she is going to invest will have no Beta.

(g) A study by a Mutual Fund has revealed the following data in respect of three securities:

Security	σ (%)	Correlation with Index
A	20	0.65
B	15	0.92
C	12	0.77

The standard deviation of market portfolio (BSE Sensex) is observed to be 18%.

- (i) What is the sensitivity of returns of each stock with respect to the market?
- (ii) What are the co variances 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)?

(h) Equity of ABC Ltd. (ABCL) is Rs. 500 Crores, its debt, is worth Rs. 290 Crores. Printer Division segments value is attributable to 64%, which has an Asset Beta (β_p) of 1.55, balance value is applied on Spares and Consumables Division, which has an Asset Beta (β_{sc}) of 1.40 ABCL Debt beta (β_D) is 0.28.

You are required to calculate:

- (i) Equity Beta (β_E),
- (ii) Ascertain Equity Beta (β_E), if ABC Ltd. decides to change its Debt Equity position by raising further debt and buying back of equity to have its Debt to Equity Ratio at 1.50. Assume that the present Debt Beta (β_{D1}) is 0.45 and any further funds raised by way of Debt will have a Beta (β_{D2}) of 0.50.
- (iii) Whether the new Equity Beta (β_E) justifies increase in the value of equity on account of leverage?

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Security Valuation + Corporate Valuation + Security Analysis

(a) The current EPS of M/s VEE Ltd. is Rs. 4. The company has shown an extraordinary growth of 40% in its earnings in the last few years. This high growth rate is likely to continue for the next 5 years after which growth rate in earnings will decline from 40% to 10% during the next 5 years and remain stable at 10% thereafter. The decline in the growth rate during the five year transition period will be equal and linear. Currently, the company's pay-out ratio is 10%. It is likely to remain the same for the next five years and from the beginning of the sixth year till the end of the 10th year, the pay-out will linearly increase and stabilize at 50% at the end of the 10th year. The post tax cost of capital is 17% and the PV factors are given below:

Years	1	2	3	4	5	6	7	8	9	10
PVIF @17%	0.855	0.731	0.625	0.534	0.456	0.390	0.333	0.285	0.244	0.209

You are required to calculate the intrinsic value of the company's stock based on expected dividend. If the current market price of the stock is Rs. 125, suggest if it is advisable for the investor to invest in the company's stock or not.

(b) XL Ltd. has issued callable 10% bonds with 30 years maturity. The issue size is Rs. 1 crore with a face value of Rs. 1,000 per bond. The bonds have been issued at a discount of 1.2% on the face value of the bonds in the year 2011. The call option is available to XL Ltd. at the end of 10 years and 20 years from the time of the issue of the bond. the floatation cost was Rs. 1,50,000.

In the year 2021 XL Ltd, has an opportunity to issue 8% bonds at par with 20 years maturity worth Rs. 1 crore with a face value of Rs. 1,000 per bond. The old bonds will be retired with the proceeds of the proposed issue. The floatation cost of the present issue will be Rs. 3,00,000 There will be an overlapping interest for a period of three months during the course of the present issue.

Post tax cost of debt for XL Ltd. is 7% p.a. The applicable tax bracket is 30%

You are required to advise XL Ltd., whether it can proceed with the proposal.

Given: PVIFA (7%, 20) = 10.594

(c) Following information is available pertaining to ABC Ltd. which is expected to grow at a higher rate for 3 years after which growth rate will stabilize at a lower level.

Base year information is –

Revenues	EBIT (After Depreciation)	Capital Expenditure	Depreciation
Rs. 1,000 Cr.	Rs. 150 Cr.	Rs. 140 Cr.	Rs. 100 Cr.

Information for high growth and stable growth period are as follows:

Particulars	High Growth	Stable Growth
Growth in Revenue & EBIT	20%	10%
Growth in Capital Expenditure and Depreciation	20%	Capital Expenditure are offset by Depreciation

Risk free rate	10%	9%
Equity Beta	1.15	1.00
Market Risk Premium	6%	5%
Pre-Tax cost of Debt	13%	12.86%
Debt Equity Ratio	1:1	2:3

Working capital is 25% of Revenue for all time. Corporate Tax Rate is 30%.
You are requested to find out the value of ABC Ltd.

(d) Strong Ltd., (SL), an all equity financed, conglomerate is in need to borrow Rs. 2,000 crore to finance expansion of its crore current operations. However, SL is susceptible to raise the amount from the market. The CFO has suggested for divesting one of the two non- prime units to reduce the overall borrowings from the market. The following data, after internal due diligence, has been placed for consideration of the Board:

(Rs. in cores)

Particulars	Unit 1	Unit 2
Reported Profit After Tax	147	140
Extra Ordinary Gains	16	8
Extra Ordinary Losses	20	12
Expected Profit from the launch of the new product	56	12
Price Earnings Ratio	10	12.5
Corporate Tax Rate (%)	30	30

You are required to advise the Board on the following:

- (i) The price at which the units can be divested,
- (ii) The unit which can be divested so as to minimise the borrowings from the market and
- (iii) The amount of borrowing.

(e) 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:

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

Additional Information:

- (a) 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

- (b) 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

- (c) Fixed assets are subject to depreciation at 15% as per WDV method.
 (d) 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

- (e) Investment in Working Capital is estimated to be 20% of Revenue.
 (f) Applicable tax rate for the company is 30%.
 (g) Cost of Equity is estimated to be 16%.
 (h) The Free Cash Flow of the firm is expected to grow at 5% per annum after 8 years.

CALCULATE:

- i. Value of Firm
- ii. Value of Equity

(f) Following information is given in respect of WXY Ltd., which is expected to grow at a rate of 20% p.a. for the next three years, after which the growth rate will stabilize at 8% p.a. normal level, in perpetuity.

	For the year ended March 31, 2014
Revenues	Rs. 7,500 Crores
Cost of Goods Sold (COGS)	Rs. 3,000 Crores
Operating Expenses	Rs. 2,250 Crores
Capital Expenditure	Rs. 750 Crores
Depreciation (included in Operating Expenses)	Rs. 600 Crores

During high growth period, revenues & Earnings before Interest & Tax (EBIT) will grow at 20% p.a. and capital expenditure net of depreciation will grow at 15% p.a. From year 4 onwards, i.e. normal growth period revenues and EBIT will grow at 8% p.a. and incremental capital expenditure will be offset by the depreciation. During both high growth & normal growth period, net working capital requirement will be 25% of revenues.

The Weighted Average Cost of Capital (WACC) of WXY Ltd. is 15%. Corporate Income Tax rate will be 30%.

Required:

Estimate the value of WXY Ltd. using Free Cash Flows to Firm (FCFF) & WACC methodology.

The PVIF @ 15 % for the three years are as below:

Year	t1	t2	t3
PVIF	0.8696	0.7561	0.6575

(g) The following data is related to 8.5% Fully Convertible (into Equity shares) Debentures issued by JAC Ltd. at Rs. 1000.

Market Price of Debenture	Rs. 900
Conversion Ratio	30
Straight Value of Debenture	Rs. 700
Market Price of Equity share on the date of Conversion	Rs. 25
Expected Dividend Per Share	Rs. 1

You are required to calculate:

- (a) Conversion Value of Debenture
- (b) Market Conversion Price
- (c) Conversion Premium per share
- (d) Ratio of Conversion Premium
- (e) Premium over Straight Value of Debenture
- (f) Favourable income differential per share

(g) Premium pay back period

(h) Mr. A will need Rs. 1,00,000 after two years for which he wants to make one time necessary investment now. He has a choice of two types of bonds. Their details are as below:

	Bond X	Bond Y
Face value	Rs. 1,000	Rs. 1,000
Coupon	7% payable annually	8% payable annually
Years to maturity	1	4
Current price	Rs. 972.73	Rs. 936.52
Current yield	10%	10%

Advice Mr. A whether he should invest all his money in one type of bond or he should buy both the bonds and, if so, in which quantity? Assume that there will not be any call risk or default risk.

(i) Following is the information of M/s. DY Ltd. for the year ending 31/03/2021:

Particulars	
Sales	Rs. 1000 Lakh
Operating Expenses Including Interest	Rs. 620 Lakh
8% Debentures	Rs. 250 Lakh
Equity Share Capital (Face value of Rs. 10 each)	Rs. 250 Lakh
Reserves and Surplus	Rs. 250 Lakh
Market Value of DY Ltd	Rs. 900 Lakh
Corporate Tax Rate	30%
Risk free Rate of Return	7%
Market Rate of Return	12%
Equity Beta	1.4

You are required to-

- Calculate Weighted Average Cost of Capital of DY Ltd.
- Calculate Economic Value Added
- Calculate Market Value Added

(j) The closing value of a Stock Market Index for the month of December, 2016 is given below:

Date Closing	Index Value
1.12.16	2790
3.12.16	2780
4.12.16	2795
5.12.16	2830
8.12.16	2760
9.12.16	2790

10.12.16	2880
11.12.16	2960
12.12.16	2990
15.12.16	3200
16.12.16	3300
17.12.16	3450
19.12.16	3360
22.12.16	3290
23.12.16	3360
24.12.16	3340
25.12.16	3290
29.12.16	3240
30.12.16	3140
31.12.16	3260

You are required to test the weak form of efficient market hypothesis by applying the run test at 5% and 10% level of significance.

Following values can be used:

Value of t at 5% is 2.101 at 18 degrees of freedom

Value of t at 10% is 1.734 at 18 degrees of freedom

(k) The following data are available for a bond:

Face Value Rs. 10,000 to be redeemed at par on maturity

Coupon rate 8.5 per cent per annum

Years to Maturity 5 years

Yield to Maturity (YTM) 10 per cent

You are required to calculate:

- (i) Current market price of the Bond,
- (ii) Macaulay's Duration,
- (iii) Volatility of the Bond,
- (iv) Convexity of the Bond,
- (v) Expected market price, if there is a decrease in the YTM by 200 basis points
 - (a) By Macaulay's Duration based estimate
 - (b) By Intrinsic Value Method.

Given

Years	1	2	3	4	5
PVIF (10%, n)	0.909	0.826	0.751	0.683	0.621

PVIF (8%, n)	0.926	0.857	0.794	0.735	0.681
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(l) The Bank BK enters into a Repo for 9 days with Bank NE in 6% Government bonds 2022 for an amount of Rs. 2 crore. The other relevant details are as follows:

First Leg Payment (Start Proceed)	Rs. 2,00,06,750
Second Leg Payment (Repayment Proceed)	Rs. 2,00,31,759
Initial Margin	1.25%
Days of accrued interest	240

Assume 360 days in a year.

CALCULATE:

- (1) Repo Rate
- (2) Dirty Price and
- (3) Clean Price

(m)

	(Rs. in lakhs)
Equity share capital	80
8% Preference share capital	40
12% Debentures	64
Reserves	32

Sun Ltd., earns a profit of Rs. 32 lakhs annually on an average before deduction of income- tax, which works out to 35%, and interest on debentures.

Normal return on equity shares of companies similarly placed is 9.6% provided:

- (a) Profit after tax covers fixed interest and fixed dividends at least 3 times.
- (b) Capital gearing ratio is 0.75.
- (c) Yield on share is calculated at 50% of profits distributed and at 5% on undistributed profits.

Sun Ltd., has been regularly paying equity dividend of 8%.

Compute the value per equity share of the company assuming:

- (i) 1% for every one time of difference for Interest and Fixed Dividend Coverage.
- (ii) 2% for every one time of difference for Capital Gearing Ratio.

(n) A valuation done of an established company by a well-known analyst has estimated a value of Rs. 500 lakhs, based on the expected free cash flow for next year of Rs. 20 lakhs and an expected growth rate of 5%.

While going through the valuation procedure, you found that the analyst has made the mistake of using the book values of debt and equity in his calculation. While you do not know the book value weights he used, you have been provided with the following information:

- (i) Company has a cost of equity of 12%,
- (ii) After tax cost of debt is 6%,
- (iii) The market value of equity is three times the book value of equity, while the market value of debt is equal to the book value of debt.

You are required to estimate the correct value of the company

CA Shubham Agrawal

FOREX + International Financial Management

(a) XP Pharma Ltd., has acquired an export order for Rs. 10 million for formulations to a European company. The Company has also planned to import bulk drugs worth Rs. 5 million from a company in UK. The proceeds of exports will be realized in 3 months from now and the payments for imports will be due after 6 months from now. The invoicing of these exports and imports can be done in any currency i.e. Dollar, Euro or Pounds sterling at company's choice. The following market quotes are available.

	Spot Rate	Annualised Premium
Rs./\$	67.10/67.20	\$ - 7%
Rs. /Euro	63.15/63.20	Euro - 6%
Rs. /Pound	88.65/88.75	Pound - 5%

Advice XP Pharma Ltd. about invoicing in which currency.
(Calculation should be upto three decimal places)

(b) A US based company is planning to set up a subsidiary company in India (where so far it was exporting) in view of growing demand for its product and competition from other US based companies. The initial project cost consisting of plant and machinery including installation is estimated to be US\$ 490 million. The net working capital requirements are estimated at US\$ 60 million. The company follows straight line method of depreciation. Currently, the company is exporting two million units every year at a unit price of US\$ 90, its variable cost per unit being US\$ 50.

The CFO of the Company has estimated the following operating cost and other data in respect of proposed project:

- (i) Variable operating cost will be US \$ 30 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) Expected useful life of the proposed plant is five years with no salvage value;
- (iv) Production capacity of the proposed project in India will be 5 million units;
- (v) Existing working capital investment for production and sale of two million units through exports was US \$ 25 million;
- (vi) Export of the product in the coming year will decrease to 1.5 million units, provided the company does not set up subsidiary company in India, in view of the presence of competing other US based companies 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 of the proposed project in India and give your advice. Present Value Interest Factors (PVIF) @ 12% for five years is as below:

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

(c) X Ltd., an Indian company, is considering a proposal to make an investment of USD 1,65,00,000 in Latin America. The project will have a life of 5 years. The current spot exchange rate is INR/USD 72. All investments and revenues will occur in USD. The USD and INR risk free rates are 8% and 12% respectively. The following cash flow is expected from the project.

Year	Cash inflow (USD)
1	30,00,000
2	37,50,000
3	45,00,000
4	60,00,000
5	75,00,000

Assume required rate of return on the project as 14%. You are required to calculate:

- The viability of the project using foreign currency approach.
- What will be the impact if there is a withholding tax of 10% applicable on the project.

(d) An importer booked a forward contract with his bank on 15th April for USD 2,00,000 due on 15th June @ Rs. 64.4000. The bank covered its position in the market at Rs. 64.2800.

The exchange rate for dollar in the interbank market on 15th June and 18th June were:

	15 th June	18 th June
Spot USD 1	Rs. 63.8000/8200	Rs. 63.6800/7200
Spot/June	Rs. 63.9200/9500	Rs. 63.8000/8500
July	Rs. 64.0500/0900	Rs. 63.9300/9900
August	Rs. 64.3000/3500	Rs. 64.1800/2500
September	Rs. 64.6000/6600	Rs. 64.4800/5600

Exchange Margin 0.10% and interest on outlay of funds @ 12%. The importer requested on 18th June for extension of contract with due date on 14th August.

On 15th June, Bank swaps by selling spot and buying one month forward.

Calculate:

- Cancellation rate
- Amount payable on \$ 2,00,000
- Swap loss
- Interest on outlay of funds, if any
- New contract rate
- Total cost

(e) ICL an Indian MNC is executing a plant in Sri Lanka. It has raised Rs. 400 billion. Half of the amount will be required after six months' time. ICL is looking an opportunity to invest this amount on 1st April, 2020 for a period of six months. It is considering two underlying proposals:

Market	Japan	US
Nature of Investment	Index Fund (JPY)	Treasury Bills (USD)

Dividend (in billions)	25	-
Income from stock lending (in billions)	11.9276	-
Discount on initial investment at the end	2%	-
Interest	-	5 per cent per annum
Exchange Rate (1 st April, 2020)	JPY/INR 1.58	USD/INR 0.014
Exchange Rate (30 th September, 2020)	JPY/INR 1.57	USD/INR 0.013

You, as an Investment Manager, is required to suggest the best course of option.

(f) M/s. Raghu Ltd. is interested in expanding its operation and planning to install manufacturing plant at US. It requires 8.82 million USD (net of issue expenses/ floatation cost) to fund the proposed project. GDRs are proposed to be issued to finance this project. The estimated floatation cost of GDRs is 2%.

Additional information:

- (i) Expected market price of share at the time of issue of GDR is Rs. 360 (Face Value Rs. 100)
 - (ii) Each GDR will represent two underlying Shares.
 - (iii) The issue shall be priced at 10% discount to the market price.
 - (iv) Expected exchange rate is INR/USD 72.
 - (v) Dividend is expected to be paid at the rate of 20% with growth rate of 12%.
- (1)** You, as a financial consultant, are required to compute the number of GDRs to be issued and cost of the GDR.
 - (2)** What is your suggestion if the company receives an offer from a US Bank willing to provide an equivalent loan with an interest rate of 12%?
 - (3)** How much company can save by choosing the option as recommended by you?

(g) On 1st October, 2020 Mr. Guru, an exporter, enters into a forward contract with the Bank to sell USD 1,00,000 on 31st December 2020 at INR/USD 75.40. However, at the request of the importer, Mr. Guru received the amount on 30th November, 2020. Mr. Guru requested the bank take delivery of the remittance on 30th November, 2020 i.e. before due date.

The inter-bank rate on 30th November 2020 was as follows:

Spot INR/USD 75.22-75.27

One Month Premium 10/15

Assume 365 days in a year.

- (i) If bank agrees to take early delivery then what will be net inflow to Mr. Guru assuming that the prevailing prime lending rate is 18% per annum.
- (ii) If Mr. Guru can deploy these funds in USD, he gets return at the rate of 3% per annum. Which is better ? Why ?

(h) XYZ has taken a six-month loan from its foreign collaborator for USD 2 millions. Interest is payable on maturity @ LIBOR plus 1%. The following information is available:

Spot Rate	INR/USD	68.5275
6 months Forward rate	INR/USD	68.4575
6 months LIBOR for USD	2%	
6 months LIBOR for INR	6%	

You are required to :

- (i) Calculate Rupee requirements if forward cover is taken.
- (ii) Advise the company on the forward cover.
- (iii) What will be your opinion if spot rate of INR/USD is 68.4275 ?

(i) ZX Ltd. has made purchases worth USD 80,000 on 1st May 2020 for which it has to make a payment on 1st November 2020. The present exchange rate is INR/USD 75. The company can purchase forward dollars at INR/USD 74. The company will have to make an upfront premium @ 1 per cent of the forward amount purchased. The cost of funds to ZX Ltd. is 10 per cent per annum.

The company can hedge its position with the following expected rate of USD in foreign exchange market on 1st May 2020:

	Exchange Rate	Probability
(i)	INR/USD 77	0.15
(ii)	INR/USD 71	0.25
(iii)	INR/USD 79	0.20
(iv)	INR/USD 74	0.40

You are required to advise the company for a suitable cover for risk.

(j) M/s Gamma Electronics Ltd. exports air conditioners to Germany by importing all the components from Singapore. The company is exporting 2,400 units at a price of Euro 500 per unit. The cost of imported components is S\$ 800 per unit. The fixed cost and other variable cost per unit are Rs. 1000 and Rs. 1,500 respectively. The cash flows in foreign currencies are due in six months. The current exchange rates are as follows

Rs. / Euro	51.50/55
Rs. / S\$	27.20/25

After six months the exchange rates turn out as follows:

Rs. / Euro	52.00/05
Rs. / S\$	27.70/75

- (i) You are required to calculate loss/gain due to transaction exposure.

- (ii) Based on the following additional information calculate the loss/gain due to transaction and operating exposure if the contracted price of air conditioners is Rs. 25,000 :
- (a) The current exchange rate changes to
 Rs. / Euro 51.75/80
 Rs. / S\$ 27.10/15
- (b) Price elasticity of demand is estimated to be 1.5
- (c) Payments and receipts are to be settled at the end of six months.

(k) Your bank's London office has surplus funds to the extent of USD 5,00,000/- for a period of 3 months. The cost of the funds to the bank is 4% p.a. It proposes to invest these funds in London, New York or Frankfurt and obtain the best yield, without any exchange risk to the bank. The following rates of interest are available at the three centres for investment of domestic funds there at for a period of 3 months.

London 5 % p.a.
 New York 8% p.a.
 Frankfurt 3% p.a.

The market rates in London for US dollars and Euro are as under:

London on New York

Spot 1.5350/90
 1 month 15/18
 2 months 30/35
 3 months 80/85

London on Frankfurt

Spot 1.8260/90
 1 month 60/55
 2 months 95/90
 3 months 145/140

At which centre, will be investment be made & what will be the net gain (to the nearest pound) to the bank on the invested funds?

(l) ABC 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:

	\$/Rs.	£/Rs.
Spot	0.0215	0.0149
30 days forward	0.0217	0.0150

Annual borrowing/deposit rates (Simple) are as available.

Rs. 6.4%/6.2%

\$ 1.6%/1.5%

£ 3.9%/3.7%

The Indian operation is forecasting a cash deficit of Rs. 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 Rs. for each company under each of the following scenarios ignoring transaction costs and taxes:
- Each company invests/finances its own cash balances/deficits in local currency independently
 - 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?

(m) H Ltd. is an Indian firm exporting handicrafts to North America. All the exports are invoiced in US\$. The firm is considering the use of money market or forward market to cover the receivable of \$50,000 expected to be realized in 3 months time and has the following information from its banker:

	Exchange Rates
Spot	Rs. /\$ 72.65/73
3-m forward	Rs. /\$ 72.95/73.40

The borrowing rates in US and India are 6 % and 12% p.a. and the deposit rates are 4% and 9% p.a. respectively.

- Which option is better for H Ltd. ?
- Assume that H Ltd. anticipates the spot exchange rate in 3-months time to be equal to the current 3-months forward rate. After 3-months the spot exchange rate turned out to be Rs./\$: 73/73.42. What is the foreign exchange exposure and risk of H Ltd.?

Derivatives + Interest Rate Risk Management

(a) SpaceX plc 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 £25 million for the entire period of slack season in about 3 months.

The banker of the firm has given the following quotations for Forward Rate Agreement (FRA):

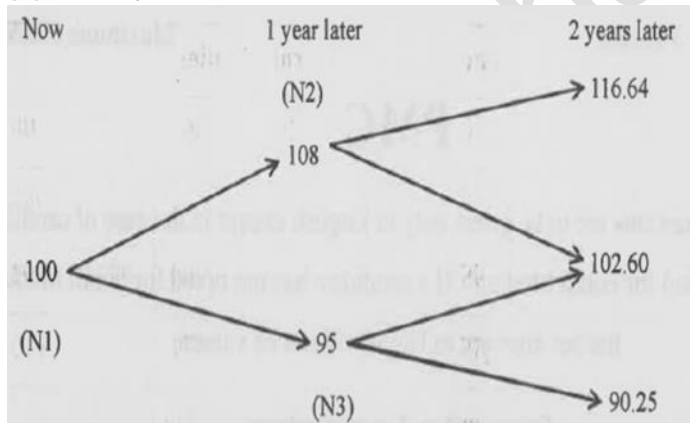
Spot	5.50% - 5.75%
3 × 6 FRA	5.59% - 5.82%
3 × 9 FRA	5.64% - 5.94%

3-month £50,000 future contract maturing in a period of 3 months is quoted at 94.15. You are required to:

- Advise the position to be taken in Future Market by the firm to hedge its interest rate risk and demonstrate how 3 months Future contract shall be useful for the firm, if later interest rate turns out to be (i) 4.5% and (ii) 6.5%
- Evaluate whether the interest cost to SpaceX plc shall be less had it adopted the route of FRA instead of Future Contract.

Note:- Ignore the time value of money in settlement amount for future contract.

(b) A two year tree for a share of stock in ABC Ltd., is as follows:



Consider a two years American call option on the stock of ABC Ltd., with a strike price of Rs. 98. The current price of the stock is Rs. 100. Risk free return is 5 per cent per annum with a continuous compounding and $e^{0.05} = 1.05127$.

Assume two time periods of one year each.

Using the Binomial Model, calculate:

- The probability of price moving up and down;
- Expected pay offs at each nodes i.e. N1, N2 and N3 (round off upto 2 decimal points).

(c) The Following data relate to A Ltd.'s Portfolio:

Shares	X Ltd.	Y Ltd.	Z Ltd.
No. of Shares (lakh)	6	8	4
Price per share (Rs.)	1000	1500	500
Beta	1.50	1.30	1.70

The CEO is of opinion that the portfolio is carrying a very high risk as compared to the market risk and hence interested to reduce the portfolio's systematic risk to 0.95. Treasury Manager has suggested two below mentioned alternative strategies:

- Dispose off a part of his existing portfolio to acquire risk free securities, or
- Take appropriate position on Nifty Futures, currently trading at 8250 and each Nifty points multiplier is Rs. 210.

You are required to:

- Interpret the opinion of CEO, whether it is correct or not.
- Calculate the existing systematic risk of the portfolio,
- Advise the value of risk-free securities to be acquired,
- Advise the number of shares of each company to be disposed off,
- Advise the position to be taken in Nifty Futures and determine the number of Nifty contracts to be bought/sold; and
- Calculate the new systematic risk of portfolio if the company has taken position in Nifty Futures and there is 2% rise in Nifty.

Note: Make calculations in Rs. lakh and upto 2 decimal points.

(d) A future contract on BSE Index with 4 months maturity is used to hedge the value of the portfolio over the next 3 months. One future contract for delivery is 50 times of the index.

The following information is available:

Value of the portfolio	Rs. 1,16,00,000
BSE Sensex on 1st January 2022 (Anticipated on 1st September 2021)	58580
BSE Sensex on 1st January 2022 (Anticipated on 1st December 2021)	56641.25
Dividend Yield of Index	6% p.a.
181 days' treasury bills offers a rate of interest	9% p.a.
Beta of the portfolio	1.5

You are required to calculate

- The present value of the Sensex as on 1st September 2021
- Turned out value of the Sensex as on 1st December 2021
- The number of contracts to hedge the portfolio.

(e) The NSE-50 Index futures are traded with rupee value being Rs. 100 per index point. On 15th September, the index closed at 1195, and December futures (last trading day December

15) were trading at 1225. The historical dividend yield on the index has been 3% per annum and the borrowing rate was 9.5% per annum.

- (i) Determine whether on September 15, the December futures were underpriced or overpriced?
- (ii) What arbitrage transaction is possible to gain out this mispricing?
- (iii) Calculate the gains and losses if the index on 15th December closes at (a) 1260 (b) 1175. Assume 365 days in a year for your calculations.

(f) Alpha Inc. and Beta Inc. intend to borrow \$250,000 and \$250,000 in ¥ respectively for a time horizon of one year. The prevalent interest rates are as follows:

Company	¥ Loan	\$ Loan
Alpha Inc.	5%	9%
Beta Inc.	8%	10%

The prevalent exchange rate is \$1 = ¥125.

They entered in a currency swap under which it is agreed that Beta Inc. will pay Alpha Inc. @1% over the ¥ Loan interest rate which the later will have to pay as a result of the agreed currency swap whereas Alpha Inc. will reimburse interest to Beta Inc. only to the extent of 9%. Keeping the exchange rate invariant, quantify the opportunity gain or loss or loss component of the ultimate outcome, resulting from the designed currency swap.

(g) XYZ Inc. issues a £ 10 million floating rate loan on July 1, 2016 with resetting of coupon rate every 6 months equal to LIBOR + 50 bp. XYZ is interested in a collar strategy by selling a Floor and buying a Cap. XYZ buys the 3 years Cap and sell 3 years Floor as per the following details on July 1, 2016:

Notional Principal Amount	\$ 10 million
Reference Rate	6 months LIBOR
Strike Rate	4% for Floor and 7% for Cap
Premium	0*

*Since Premium paid for Cap = Premium received for Floor

Using the following data you are required to determine:

- (i) Effective interest paid out at each reset date,
- (ii) The average overall effective rate of interest p.a.

Reset Date	LIBOR (%)
31-12-2016	6.00
30-06-2017	7.50
31-12-2017	5.00
30-06-2018	4.00
31-12-2018	3.75
30-06-2019	4.25

(h) ABC Ltd. borrows £ 15 Million of six months LIBOR + 10.00% for a period of 24 months. The company anticipates a rise in LIBOR; hence it proposes to buy a Cap Option from its bankers at the strike rate of 8%. The lump sum premium is 1.00% for the entire reset periods and the fixed

rate of interest is 7.00% per annum. The actual position of LIBOR during the forthcoming reset period is as under:

Reset Period	LIBOR
1	9.00%
2	9.50%
3	10.00%

Analyze how far interest rate risk is hedged through Cap Option.

Assume that the Cap option at the strike rate of 8% is on LIBOR.

(For calculation, work out figures at each stage upto four decimal points and amount nearest to £).

(i) A Rice Trader has planned to sell 22000 kg of Rice after 3 months from now. The spot price of the Rice is Rs. 60 per kg and 3 months Future on the same is trading at Rs. 59 per kg. Size of the contract is 1000 kg. The price is expected to fall as low as Rs. 56 per kg, 3 months hence. Required:

- (i) to interpret the position of trader in the Cash Market.
- (ii) to advise the trader the trader should take in Future Market to mitigate its risk of reduced profit.
- (iii) to demonstrate effective realized price for its sale if he decides to make use of future market and after 3 months, spot price is ₹ 57 per kg and future contract price for closing the contract is ₹ 58 per kg.

(j) All the Best Limited, London will have to make a payment of \$ 3,64,897 in 6 months time. It is currently 1st October. The company is considering the various choices it has in order to hedge its transaction exposure

Exchange rate:		
Spot rate		\$ 1.5617 – 1.5773
Six months forward rate		\$ 1.5455 – 1.5609
Money Market Rates		
	Borrow (%)	Deposit (%)
US	6	4.5
UK	7	5.5

Foreign Currency option prices (1 unit as £ 12,500):

Exercise Price	Call option (March)	Put option (March)
\$ 1.70	\$ 0.037	\$ 0.096

By making the appropriate calculation and ignoring time value of money (in case of premia) decide which of the following hedging alternatives is the most attractive to All the Best Ltd.

- (a) Forward Market
- (b) Cash (Money) Market
- (c) Currency Option

(k) From the following data for certain stock, find the value of a call option:

Price of stock now	=	Rs. 80
Exercise price	=	Rs. 75
Standard deviation of continuously compounded annual return	=	0.40
Maturity period	=	6 months
Annual interest rate	=	12%

Given

Number of S.D. from Mean, (z)	Area of the left or right (one tail)
0.25	0.4013
0.30	0.3821
0.55	0.2912
0.60	0.2743

$$e^{0.12 \times 0.5} = 1.062$$

$$\ln 1.0667 = 0.0646$$

(l) A company is long on 10 MT of copper @ Rs. 534 per kg (spot) and intends to remain so for the ensuing quarter. The variance of change in its spot and future prices are 16% and 36% respectively, having correlation coefficient of 0.75. The contract size of one contract is 1,000 kgs.

Required:

- Calculate the Optimal Hedge Ratio for perfect hedging in Future Market.
- Advice the position to be taken in Future Market for perfect hedging.
- Determine the number and the amount of the copper futures to achieve a perfect hedge.

(m) A textile manufacturer has taken floating interest rate loan of Rs. 40,00,000 on 1st April, 2012. The rate of interest at the inception of loan is 8.5% p.a. interest is to be paid every year on 31st March, and the duration of loan is four years.

- Suppose in the month of October 2012, the Central bank of the country releases following projections about the interest rates likely to prevail in future.

Date	Rate of Interest
On 31st March, 2013	8.75%
On 31st March, 2014	10.00%
On 31st March, 2015	10.50%
On 31st March, 2016	7.75%

Show how borrower can hedge the risk arising out of expected rise in the rate of interest when he wants to peg his interest cost at 8.50% p.a.

- ii) Assume that the premium negotiated by both the parties is 0.75% to be paid on 1st October, 2012 and the actual rate of interest on the respective due dates happens to be as follows:

Date	Rate of Interest
On 31st March, 2013	10.20%
On 31st March, 2014	11.50%
On 31st March, 2015	9.25%
On 31st March, 2016	8.25%

Show how the settlement will be executed on the respective interest due dates.

(n) On 19th April following are the spot rates

Spot EUR/USD 1.2000

Spot USD/INR 44.8000

Following are the quotes of European Options:

Currency Pair	Call/Put	Strike Price	Premium	Expiry Date
EUR/USD	Call	1.2000	\$ 0.035	July 19
EUR/USD	Put	1.2000	\$ 0.04	July 19
USD/INR	Call	44.8000	Rs. 0.12	Sep. 19
USD/INR	Put	44.8000	Rs. 0.04	Sep. 19

- i) A trader sells an at-the-money spot straddle expiring at three months (July 19). Calculate gain or loss if three months later the spot rate is EUR/USD 1.2900.
- ii) Which strategy gives a profit to the dealer if five months later (Sep. 19) expected spot rate is USD/INR 45.0000. Also calculate profit for a transaction of USD 1.5 million.

Value at Risk

Following is the information about Mr. A's portfolio:

Investment in shares of ABC Ltd. = Rs. 100 lakh

Investment in shares of XYZ Ltd. = Rs. 300 lakh

Daily standard deviation of both shares = 1%

Co-efficient of correlation between both shares = 0.3

Required:

Determine the 10 days 99% Value at Risk (VaR) for Mr. A's portfolio.

Given: The Z score from the Normal Table at 99% confidence level is 2.33. (Show your calculations upto 4 decimal points.)

Miscellaneous (Theory Questions)

- (a)** 'Venture Capital Financing is a unique way of financing Startup'. Discuss.
- (b)** Explain Pitch Presentation. List the methods for approaching a Pitch Presentation.
- (c)** State the problems faced in growth of securitization instruments in Indian context.
- (d)** State the strategy at different hierarchy levels.
- (e)** What is exchange traded fund? What are its advantages?
- (f)** What is the advantage of venture capital investing to VCU?
- (g)** What do you know about swaptions and their uses?
- (h)** Explain the mechanism of securitization.
- (i)** Describe Value at Risk and its application.
- (j)** Participants are required for the success of the securitisation process. Discuss their roles.
- (k)** Explain Indicative Risk Matrix of each stages of funding for Venture Capital Financing.
- (l)** "The process of securitisation can be viewed as process of creation of additional financial product of securities in the market backed by collaterals." What are the other features? Describe.
- (m)** Explain the traits that an organisation should have to make itself financially sustainable.