ADDITIONAL QUESTIONS

VALUATION OF SECURITIES (SECURITY ANALYSIS AND SECURITY VALUATION)

Question 1 *[Classwork]* *(ICAI Paper Sept 25)*

ABC Ltd.'s share is currently traded at the price of ₹ 192.50 per share. Mr. Roni is planning to purchase the shares of the company. For this purpose, he has taken the services of a financial analyst to know whether the price of ABC Ltd. is fairly priced. The analyst has assembled the following information:

- The before-tax required rates of return on ABC Ltd. debt, preferred stock, and common stock are 8.60%, 11%, and 13%, respectively.
- The company's target capital structure is 20% debt, 30% preferred stock and 50% Common stock.
- The market value of the company's debt is 275 million and its preferred stock are valued at 120 million.
- ABC Ltd.'s free cash flow to the firm (FCFF) for the year just ended is 125 million. FCFF is expected to grow at a constant rate of 8% for the foreseeable future.
- The tax rate is 30%.
- ABC Ltd. has 20 million outstanding common shares.

You are required to -

(i) As a financial analyst, on the basis of value per share, advise Mr. Roni whether he should purchase the shares of the company at market price or not.

(ii) Assume, we are to get same value of equity as calculated in (i) for using FCFE approach, calculate free cash flow to the equity (FCFE) for the year just ended, if FCFE is expected to grow at a constant rate of 8.50% for the foreseeable future.

Calculation up to 2 decimal points.

Question 2 *[Homework]* *(ICAI Paper Sept 25)*

PN Limited submits the following details for the financial year ended on 31st March 2025:

Particulars	
Number of Equity Shares	1,50,000
Current market price per share	₹ 12
10% Debts	₹ 2,00,000
Cash and Cash Equivalents	₹ 5,00,000

Gross Profit	₹ 12,00,000
Indirect Expenses (Excluding Depreciation & Interest)	₹ 5,00,000
Depreciation	₹ 30,000
Risk-free rate of return	7%
Market rate of return	16%
Beta of the Company	0.8
Applicable Tax Rate	20%

On the basis of above details, you are required to calculate the following:

(i) Cost of Equity of the company using CAPM.

(ii) Earnings Per Share (EPS) of the company.

(iii) Equity Value of the company if applicable EBIDTA multiple is 4.

(iv) Enterprise Value of the company.

Calculation up to 2 decimal points.

MERGERS, ACQUISITIONS AND CORPORATE RESTRUCTURING

Question 1 *[Classwork]* *(RTP Jan 26)/(MTP Aug 25)*

X Ltd. is studying the possible acquisition of Y Ltd. by way of merger. The following data are available in respect of both the companies.

Particulars	X Ltd.	Y Ltd.
Market Capitalization (₹)	75,00,000	90,00,000
Gross Profit Ratio	20%	20%
Inventory Turnover Ratio	5 times	4 times
Debtor Turnover Ratio	3 times	5 times
12% Debenture (₹)	10,00,000	-
10% Debenture (₹)	-	14,40,000
No. of Equity Shares	1,00,000	60,000
Operating Expenses	86%	78%
Corporate Tax Rate	30%	30%
Closing Stock (₹)	15,00,000	5,00,0000
Debtors (₹)	10,00,000	8,00,000

You are required to calculate:

(i) Swap ratio based on EPS & MPS respectively as weightage of 40% and 60%

(ii) Post Merger EPS

(iii) Post Merger market price assuming same PE Ratio of X Ltd.

(iv) Post Merger gain or loss in EPS

Summary

Detailed Solution

Working Notes:

(1) Inventory Turnover Ratio = $\frac{COGS}{Closing\ Stock}$

X Ltd.	Y Ltd.
$5 = \frac{COGS}{15,00,000}$	$4 = \frac{COGS}{5,00,000}$
COGS = ₹ 75,00,000	COGS = ₹ 20,00,000
Gross Profit Ratio = 20% means COGS is 80% of Sales, then	
$Sales = \frac{75,00,000 \times 100}{80}$	$Sales = \frac{75,00,000 \times 100}{80}$
= ₹ 93,75,000	= ₹ 25,00,000

Statement of Profit

Particulars	X Ltd.	Y Ltd.
Sales	93,75,000	25,00,000
Less: Operating Exp.	80,62,500	19,50,000
EBIT	13,12,500	5,50,000
Less: Interest	1,20,000	1,44,000
EBT	11,92,500	4,06,000
Less: Tax@30%	3,57,750	1,21,800
EAT	8,34,750	2,84,200

(2)

Particulars	X Ltd.	Y Ltd.
No. of Shares	1,00,000	60,000
EPS (EAT/ No. of Shares)	8,34,750/1,00,000 = ₹ 8.34	2,84,200/60,000 = ₹ 4.74
Market Price Share (Market Capitalisation/No. Shares)	75,00,000/1,00,000 = ₹ 75	90,00,000/60,000 = ₹ 150
PE Ratio (MPS/EPS)	75/8.34 = 8.99	150/4.74 = 31.65

(i) Swap Ratio = $\frac{Target\ Co.}{Acquirer\ Co.}$

Particulars	Acquirer Co. X Ltd.	Target Co. Y Ltd.	Weight
EPS	0.34	4.74	00.40
MPS	75	150	0.60

EPS	$\frac{4.74}{8.34} \times 0.40$	0.227
MPS	$\frac{150}{75} \times 0.60$	1.200
		1.427

(ii) Post Merger EPS =

$$\frac{EAT_X + EAT_y}{\text{No.of Shares of Both Cos.}} = \frac{8,34,750 + 2,84,200}{1,00,000 + (60,000 \times 1.227)} = \frac{11.18.950}{1,85,620}$$

$$= 6.03$$

(iii) Post Merger market price assuming same PE of X Ltd.

MPS = PE x EPS = 8.99 x 6.03 = ₹ 54.21

(iv) Gain or Loss to the share holders

	Pre-Merger EPS	Post Merger EPS
X Ltd.	₹ 8.34	₹ 6.99
Y Ltd.	₹ 4.74	₹ 6.99 x 1.427 = ₹ 9.97

While Shareholders of X Ltd. will lose EPS of ₹ 1.35 (₹ 8.34 - ₹ 6.99) per share the shareholders of Y Ltd. stands to gain EPS of ₹ 5.23 (₹ 9.97 - ₹ 4.74) per share.

PORTFOLIO MANAGEMENT

Question 1 *[Classwork]* *(ICAI Paper Sept 25)*

The following details are given for TC Limited and PC Limited stocks and Nifty Index for a period of one year:

Particulars	TC Limited	PC Limited	Nifty Index
Average return	0.12	0.18	0.6
Variance of return	5.8	4.8	2.10
Beta (B)	0.8	0.7	
Proportion of allocated fund	50%	50%	

You are required to

(i) Calculate the systematic and unsystematic risk for the companies' stocks.

(ii) Calculate portfolio risk.

(iii) If the proportion of fund allocation is changed to 60:40 for TC Limited and PC Limited respectively, advise whether it is preferable or not.

Calculation up to 3 decimal points.

ADVANCED CAPITAL BUDGETING DECISIONS

Question 1 *[Classwork]* *(RTP Jan 26)/(MTP Aug 25)*

SS Company is considering the replacement of its existing machine with a new machine. The Purchase price of the New machine is ₹ 26 Lakhs and its expected Life is 8 years. The company follows straight-line method of depreciation on the original investment (scrap value is not considered for the purpose of depreciation). The other expenses to be incurred for the New Machine are as under:

(i) Installation Charges ₹ 9,000

(ii) Fees paid to the consultant for his advice to buy New Machine ₹ 6,000.

(iii) Additional Working Capital required ₹ 17,000. (will be released after 8 years)

The written down value of the existing machine is ₹ 76,000, and its Cash Salvage Value is ₹ 12,500. The dismantling of this machine would cost ₹ 4,500. The Annual Earnings (before tax but after depreciation) from the New Machine would amount to ₹ 3,15,000. Income tax rate is 35%. The Company's required Rate of Return is 13%.

You are required to advise on the viability of the proposal.

PVIF (13%, 8) = 0.376 PVIFA (13%, 8) = 4.80

Summary

Detailed Solution

Working Notes:

(1) Computation of Annual Depreciation

Particulars	(₹)
Purchase Price	26,00,000
Add: 1. Installation Charges	9,000
2. Fees Paid to Consultant for Advice	6,000
Total Cost of New Machine	26,15,000
Useful Life	8 Years
Annual Depreciation (Total Cost/No. of Years)	3,26,875

(2) Computation of Annual Cash Savings-

Particulars	(₹)
Annual Earnings	3,15,000
Less: Tax @35%	1,10,250
Earning after Tax	2,04,750

Add-Depreciation on New Machine	3,26,875
Annual Cash Savings	5,31,625

(3) Tax effect on sale of Old Machine

Particulars	(₹)
Proceeds of Sale	12,500
Less: Cost of Removal	4,500
Net Proceeds	8,000
Less: WDV	76,000
Net Loss due to Sale	68,000
Tax savings due to Loss on Sale @35%	23,800
Total Cash Inflow due to Sale (₹ 8,000 + ₹ 23,800)	31,800

(4) Computation of Net Present Value

Particulars	Period	Cash Flow (₹)	PVF @13%	PV (₹)
(a) Annual Cash inflow after Tax	1-8	5,31,625	4.8	25,51,800
(b) Net Salvage Value of Existing Machine	0	31,800	1.0	31,800
(c) Working Capital Realized	8	17,000	0.376	6,392
Present Value of Cash Inflows				25,89,992
Less: 1. Initial Investment	0	26,15,000	1.0	26,15,000
2. Initial Working Capital	0	17,000	1.0	17,000
NPV of the Proposal				(42,008)

Decision: Since NPV of the project is negative it is not viable.

ADDITIONAL QUESTIONS

MUTUAL FUNDS

Question 1 *[Classwork]* *(ICAI Paper Sept 25)*

In 2024, Mr. Ra , an investor made a lump sum investment in an equity mutual fund that had an entry load of 0.05 per unit. By the end of the year, the NA appreciated by 13.60%. Additionally, the fund declared a total capital gain and dividend of 5.00 per unit, which were reinvested at a year-end NA of 25. As a result, the investor held 15,000 units at year-end.

The fund also charges an exit load of 1% if redeemed within 1 year. The investor is in the 20% tax bracket. Inflation rate during the year is 4.50%.

You are to required to

(i) Calculate the number of units purchased by Mr. Ra at the beginning of the investment.

(ii) Calculate the NA per unit and the total investment amount made by Mr. Ra at the beginning of the year.

(iii) Appraise the return percentage and the real return percentage, if Mr. Ra decided to exit the investment at the end of the year.

Calculation up to 2 decimal points.

FOREIGN E C ANGE E POSURE AND RIS MANAGEMENT

Question 1 *[Classwork]* *(MTP Aug 25)*

An Indian company obtains the following quotes (₹)

Spot: 85.90 86.10

3 - Months forward rate: 86.00 86.25

6 - Months forward rate: 86.10 86.40

The company needs funds for six months. Determine whether the company should borrow in or ₹

Interest rates are :

3 - Months interest rate : ₹ : 12%, : 6% 6 - Months interest rate : ₹ : 11.50%, : 5.5%

Also determine what should be the rate of interest after 3-months to make the company indifferent between 3-months borrowing and 6-months borrowing in the case of:

(i) Rupee borrowing (ii) Dollar borrowing

Note: For the purpose of calculation you can take the units of dollar and rupee as 100 each.

Summary

Detailed Solution

(i) If company borrows in $ then outflow would be as follows:

Let company borrows 100	100.00
Add: Interest for 6 months @ 5.5%	2.75
Amount Repayable after 6 months	102.75
Applicable 6 month forward rate	86.40
Amount of Cash outflow in Indian Rupees	₹ 8,877.60

If company borrows equivalent amount in Indian Rupee, then outflow would be as follows:

quivalent ₹ amount ₹ 86.10 x 100	₹ 8,610.00
Add: Interest @11.50% for months	₹ 495.08
	₹ 9,105.08

Since cash outflow is more in ₹ borrowing then borrowing should be made in .

(ii) (a) Let i_r' be the interest rate of ₹ borrowing make indifferent between 3 months borrowings and 6 months borrowing then

$(1 + 0.03)(1 + i_r) = (1 + 0.0575)$

i_r = 2.67% or 10.68% (on annuali ed basis)

(b) Let i_d' be the interest rate of $ borrowing after 3 months to make indifference between 3 months borrowings and 6 months borrowings. Then,

$(1 + 0.015)(1 + i_d) = (1 + 0.0275)$

i_d = 1.232% or 4.93% (on annuali ed basis)

Question 2 *[Classwork]* *(RTP Jan 26)*

XP Pharma Ltd., has acquired an export order for ₹ 10 million for formulations from a uropean company. The Company has also planned to import bulk drugs worth ₹ 5 million from a company in U . The proceeds of exports will be reali ed 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, uro or Pounds sterling at company's choice. The following market quotes are available.

Particulars	S ot ate	Annualised Premium
₹	87.10 87.20	- 7%
₹ uro	101.15 101.20	uro - 6%
₹ Pound	116.65 116.75	Pound - 5%

Advise XP Pharma Ltd. in which currency invoicing for both import and export should be opted for.

(xchange Rate including calculations should be upto two decimal places).

Summary

Detailed Solution

(i) Proceeds of xports in INR = ₹ 10 Million

Position of Inflow under three currencies will be as follows:

Currency	In oice at S ot ate	Ex ected ate after 3-months	Con ersion in IN after 3-months
	₹ 1,00,00,000 ₹ 87.10 = 1,14,810.56	₹ 87.10 (1 + 0.07 4) = ₹ 88.62	₹ 88.62 x 1,14,810.56 = ₹ 1,01,74,511.83
	₹ 1,00,00,000 ₹ 101.15 = 98,863.07	₹ 1,01.15 (1 + 0.06 4) = ₹ 102.67	₹ 1,02.67 x 98,863.07 = ₹ 1,01,50,271.40
	₹ 1,00,00,000 ₹ 116.65 = 85,726.53	₹ 1,16.65 (1 + 0.05 4) = ₹ 118.11	₹ 1,18.11 x 85,726.53 = ₹ 1,01,25,160.46

(ii) Payment of Import in INR = ₹ 5 Million

Position of outflow under three currencies will be as follows:

Currency	In oice at S ot ate	Ex ected ate after -months	Con ersion in IN after -months
	₹ 50,00,000 ₹ 87.20 = 57,339.45	₹ 87.20 (1 + 0.07 4) = ₹ 90.25	₹ 90.25 x 57,339.45 = ₹ 51,74,885.36
	₹ 50,00,000 ₹ 101.20 = 49,407.11	₹ 1,01.20 (1 + 0.06 2) = ₹ 104.24	₹ 1,04.24 x 49407.11 = ₹ 51,50,197.15
	₹ 50,00,000 ₹ 116.75 = 42826.55	₹ 1,16.75 (1 + 0.05 2) = ₹ 119.67	₹ 1,19.67 x 42,826.55 = ₹ 51,25,053.24

Ad ice: Since cash inflow is highest (₹ 101,74,511.83) in case of hence invoicing for Export should be in $. However, cash outflow is least (₹ 51,25,053.24) in case of the invoicing for import should be in .

DERIVATIVES ANALYSIS AND VALUATION

Question 1 *[Classwork]* *(RTP Jan 26)/(MTP July 25)*

(i) On 1 April 2015, Sunidhi was holding a portfolio of 10 securities whose value was ₹ 9,94,450, the weighted average of beta of 9 securities of the portfolio was 1.10.

Since she was expecting a fall in the prices of the shares in near future to hedge her portfolio, she sold 5 contract of NIFTY Futures (Multiplier of 25) expiring in May 2015, which was trading at 8767.07 on 1 April.

Required:

(1) Calculate the beta of the 10th security.

(2) Reconcile the reasons in spite of 2% fall in the market as per Sunidhi's apprehension if she would have earned some profit on her cash position.

(ii) A Futures contract is available on R Ltd. that pays an annual dividend of ₹ 4 and whose stock is currently priced at ₹ 125. ach Futures contract calls for delivery of 1,000 shares to stock in one year, daily marking to market. The treasury bill rate is 8%.

Required:

(1) Given the above information, assess the price of one Futures contract.

(2) If the company stock price decreases by 6%, then what will be the price of one Futures contract

(3) Suppose the company stock price decreases, then evaluate reali es gain or loss for an investor that has a long position in one Futures contract of R Ltd.

(Ignore margin and taxation, if any)

Summary

Detailed Solution

(i) (1) To compute the beta of 10th security first we shall compute overall weighted beta as follows:

Let weighted β of the Portfolio is w, then,

$$5 = \frac{9,94,459}{8767.07 \times 25} \times w$$

w = 1.102 approximately

Let beta of 10th security is β then,

1.102 = 0.90 x 1.10 + 0.10 x β = β = 1.12

(2) The main reason for the profit in cash position might be due to reason that contrary to her expectation fall in the value of cash position there may be increase in value of cash position or decrease in the stock price may be lesser than 2%.

(ii) (1) Future Price = Spot + Cost of Carry Dividend

= ₹ 125 + (₹ 125 x 0.08) ₹ 4 = ₹ 131

Price of one future contract = 1,000 share x ₹ 131 = ₹ 1,31,000

(2) Price decrease by 6%

Market Price = ₹ 125 x 94% = ₹ 117.50

Then, price of one future contract

= ₹ 117.50 + (₹ 117.50 x 0.08) ₹ 4 = ₹ 122.90 = ₹ 122.90 x 1,000 = ₹ 1,22,900

(3) If the investor has taken a long position, decrease in price will result in ***loss*** for the investor.

Amount of loss will be:

₹ 1,31,000 - ₹ 1,22,900 = ₹ 8,100